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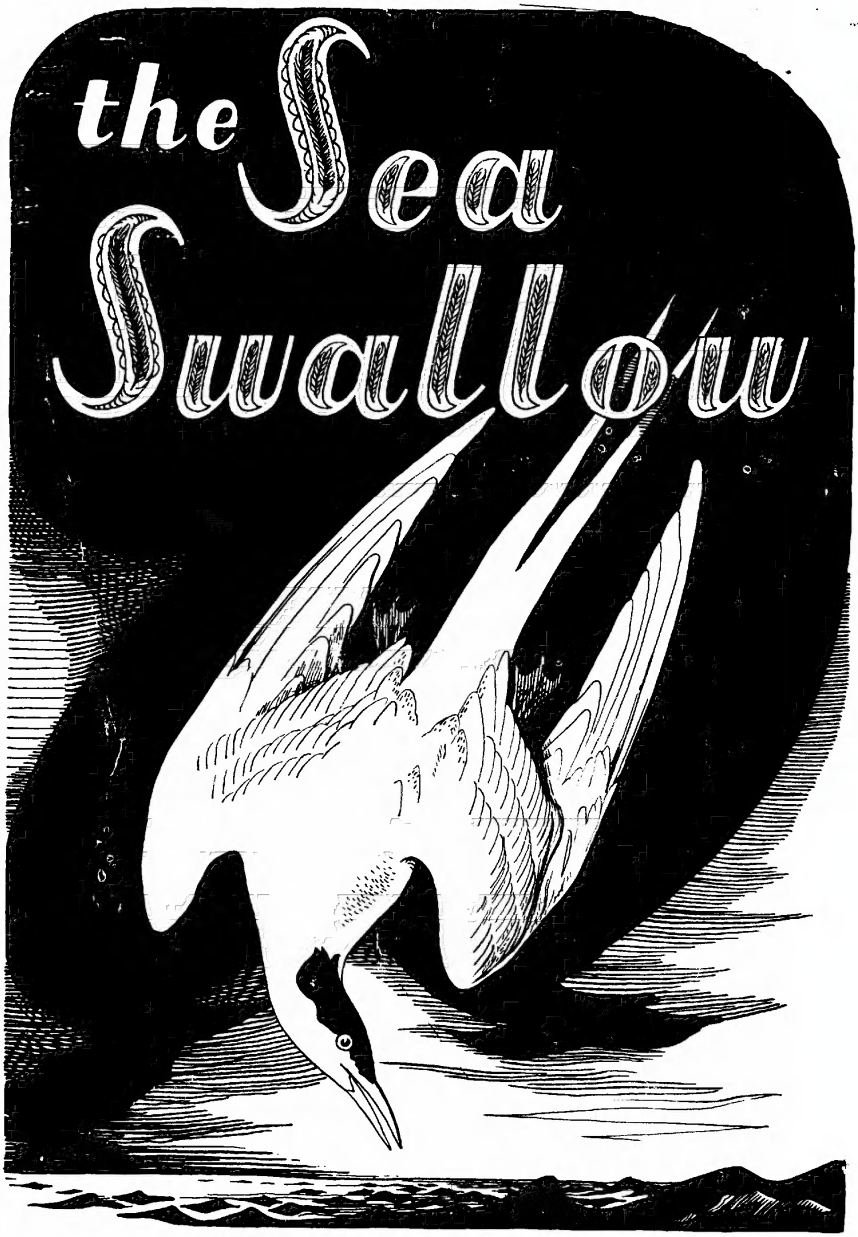
the Sea Swallow



BEING THE ANNUAL REPORT OF THE ROYAL NAVAL BIRD WATCHING SOCIETY

Published December, 1960

ROYAL NAVAL BIRD WATCHING SOCIETY

(Affiliated to the British Trust for Ornithology)

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1960

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Photograph by Lieut. N. Bailey, R.N.

Jouanin's Petrel (*Bulweria fallax*). Attracted to flight deck lighting at night on 25th May, 1960 at 11° 24′ N. 57° 05′ E. Notice the distinctive short, thick black bill with short raised nostrils characteristic of all gad-fly petrels of the genera *Bulweria* or *Pterodroma* which is normally held pointed downwards and forwards in flight.

FOREWORD

R.N.B.W.S. has suffered a grievous loss in the death of our late President, Admiral of the Fleet, Sir Charles Lambe. Although Sir Charles was fulfilling a most arduous task as First Sea Lord he readily accepted the Presidency and took a very active interest in the work of the Society.

Shortly before his death he had kindly written a foreword to this report which I am sure that members would not wish me to exclude. In it Sir Charles wrote:—

"The association of the Merchant Navy with the Royal Navy, in the interests of birdwatching, has now become a decisive factor in the affairs of our Society.

I welcome particularly the timely addition to the strength of our executive council this year of two distinguished members of the Merchant Navy, Captain J. D. Elvish, C.B.E., as a Vice-President, and Captain P. P. O. Harrison as a member of our editorial and advisory panel.

In the death of Commander C. E. Hamond we have also lost a member whose work for R.N.B.W.S. will always be remembered with gratitude and, to many individuals, with real affection.

For the continued increase in membership we are indebted not only to the co-operation of our own members but also to those who have called attention to the Society in their seafaring journals.

Several new contacts have been established with ornithological societies overseas. We were particularly glad to welcome Professor Dr. K. H. Voous of the Zoological Museum of Amsterdam earlier this year, and to discuss the suggestion which he raised of the possibility of establishing a Netherlands Seafarers' Birdwatching Society on lines parallel to our own. Such a project would indeed receive enthusiastic support from every quarter interested in advancing the world-wide study of Ocean birds. Many more pairs of eyes are needed! Dr. Voous can be assured of our full co-operation.

I hope that our members, who have recorded so many observations of sea and land birds for the Society in 1960, will look forward with keen anticipation to a bumper year in 1961, be they ashore or afloat."

CHAIRMAN.

1960.

EDITORIAL

The welcome addition this year of much more material submitted for inclusion in *Sea Swallow* brings to a head the ever present problem of production cost and space available with such a relatively limited circulation. It is hoped that ways and means (including the somewhat stronger financial position in which the society is now placed) will be found to increase the size of the report within the framework of the existing annual subscription. As an interim measure your Editor has sacrificed the inclusion of the routine forms usually included in the latter pages of the report in order to give more space to current reading matter about birds.

STATE OF SOCIETY

Twenty-five new members have joined R.N.B.W.S. since our last annual report was published bringing total membership to two-hundred-and-forty-three.

SEA REPORTS—SEA BIRDS

Members may wonder why comments on sea reports in this issue only cover those received between the publication of last year's *Sea Swallow* and 31st December, 1959. The method of handling these reports and the policy for the future has been outlined in Dr. W. R. P. Bourne's notes introducing these reports.

SEA REPORTS—LAND BIRDS

A new method of tabulating reports on land birds according to ocean areas has also been adopted for the first time in this report.

SEA REPORTS FROM AIR MINISTRY METEOROLOGICAL OFFICE

We are always interested in reports of birds from extracts of ships' meteorological logs which the Meteorological Office kindly sends us.

Few of the reporters are aware of R.N.B.W.S. and in many cases the details leave much to the imagination. During the year R.N.B.W.S. has replied direct to ten Masters of ships in which it has been possible to identify or at least comment usefully on their reports.

NEW R.N.B.W.S. STANDARD REPORTING FORM

A new form "Report of a bird examined in the hand" has been published. We acknowledge with thanks the advice given by Mrs. B. P. Hall and Dr. W. R. P. Bourne in the preparation of the form. The form provides all the details necessary for a comprehensive report on measurements, plumage, etc. We recommend that every reporting member at sea should have one or two of these forms in his kit locker. They are obtainable free from the Hon. Secretary.

CONTACT WITH OTHER SOCIETIES

We have extended our links overseas by an exchange of correspondence and reports with the Wildlife section of the C.S.I.R.O. (Commonwealth Scientific and Research Organisation) of Australia—The New South Wales Albatross Study Group — The Falkland Islands Dependencies Survey Scientific Bureau and the International Oceanographic Foundation.

We are grateful not only for these reports but also for permission to make use of photographs of sea birds offered to our photographic

library, and to publish Mr. W. L. N. Tickell's article on 'Chick Feeding by the Wandering Albatross' in this issue.

Of particular interest for the future has been our liaison with Professor Dr. K. H. Voous of the Zoologisch Museum of Amsterdam. As a result of our discussions, Dr. Voous is now hoping to constitute a Dutch Seafarers Birdwatching Society which will be affiliated to the Netherlands Ornithological Union, and which would base its organisation at the outset on the standard forms and methods now in use by R.N.B.W.S.

NEW SOUTH WALES ALBATROSS STUDY GROUP

We shall continue to publish information regarding the ringing of Albatrosses in our bulletins.

Unfortunately, but perhaps not unexpectedly, no red banded Wandering Albatrosses have been observed at sea by members up to the date of this report.

During the present banding season (1960) BLUE bands are being used.

A Royal Albatross has been caught, the first ever to be identified in Australian waters, and another Wanderer with a F.I.D.S. ring, probably from South Georgia but yet to be confirmed.

LECTURES AND TALKS

During January, 1960, your Chairman was kindly invited to give a short talk on the work of R.N.B.W.S. to the British Ornithologists Club. Later two short talks on birdwatching at sea were given over the B.B.C. Merchant Navy Programme, the first by Captain Tuck and the second by Captain P. P. O. Harrison, M.N. We hope to be given further opportunities to repeat such talks.

Captain Tuck has also had the pleasure of giving a lecture to the Horsham Natural History Society.

PHOTOGRAPHIC LIBRARY

We acknowledge with thanks photographs received from:— Capt. A. J. F. Colquhoun, M.N., Chief Officer T. B. Scott, M.N., Sub-Lieut. G. S. Clarke, R.N., and Lieut. N. Bailey, R.N., from which we have made 2" x 2" transparencies for use with a projector.

We shall be most grateful for any further photographs (negatives or enlargements or colour transparencies for copying) which members may be able to send.

CHRISTMAS CARD ILLUSTRATION

Our thanks are due to Commander A. M. Hughes, O.B.E., R.N., for undertaking the illustration for the 1960 card.

BIRD RINGING

The British Trust for Ornithology is now the central co-ordinating authority for all British bird ringing and has assumed responsibility for the oceanic ringing activities of the National Institute for Oceanography. The Falkland Island Dependencies Survey will also be using B.T.O. rings in future labelled "Inform Brit. Mus. Nat. Hist."

Members should in future apply to "The Ringing Scheme," c/o Bird Room, British Museum (Natural History), London, S.W.7, both for supply of rings and for rendering returns direct. Members applying for ringing material should quote that they are members of R.N.B.W.S. and Ocean bird ringers.

G. S. TUCK, *Editor.*

Commander C. E. Hamond, D.S.O., D.S.C., Royal Navy*
1885 – 1959

Commander C. E. Hamond who died on 16th December, 1959, was one of the founder members of R.N.B.W.S. and gave devoted service to the Society.

Those who had the good fortune to have known him personally will recall his unique and lovable character. One remembers best, perhaps, the bluff figure with the grizzled torpedo beard and twinkling blue eyes, in fisherman's jersey and sheath knife at hip, greeting one at the boatshed in his garden where so many of his " Duck " class sailing dinghies were born.

" Bill " Hamond was a true Norfolk man, a seaman, a fisherman, and who better to have led the Norfolk fishing fleet minesweeping in World War I, and above all a naturalist in many fields. His wide knowledge of birds was bred on the Norfolk marshes and enriched through experience in many oceans.

There will be many who will remember the sensitive craftsmanship and artistry that went into his woodwork, but perhaps fewer will have had the enjoyment of studying the delightful water colour sketches of birds, painted in the field, which filled his notebooks.

In all his many activities he achieved a degree of friendship and respect among all sorts and conditions of people that few others could attain.

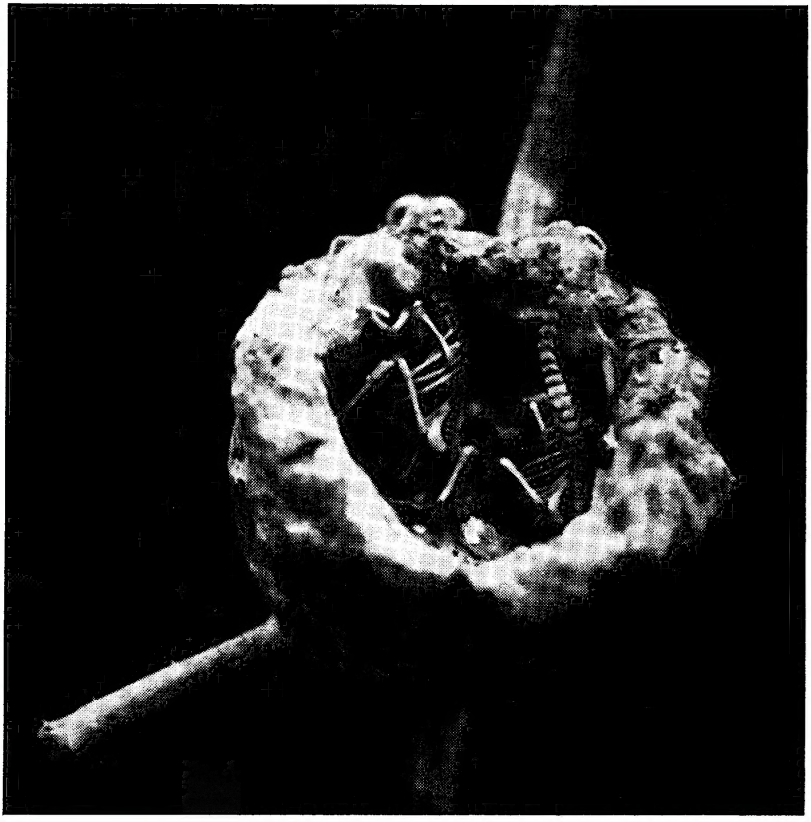
Few there must be amongst Naval Officers to have won a D.S.C. in the First World War, and more than twenty years later, to have won a bar to the D.S.C. and also a D.S.O., at an age of nearly sixty years, in the Second World War.

NOTE ON RUBY AND TOPAZ HUMMING BIRD

(Chrysolampis mosquitus)

(Note by Editor :—During his last visit to Tobago, Commander Hamond continued to make notes and sketches of many of the inland birds. The following note is typical of the detail and care which exemplified all his observations. The whole nest was brought back to England and kindly photographed by Miss Iris Darnton.)

This is one of the most numerous and beautiful humming birds found in Tobago. The male is, at first sight, black, but a change in the incidence of light produces prismatic flashes of vivid red on the crown and nape, and golden on the throat. Flashes of green and bronze appear



Nest of Ruby and Topaz Humming Bird with Skeletons of Young

(Photo by Miss Iris Darnton)

on the body. The movements and colour changes are too rapid for the eye to follow, and the red and gold flash on and off as if electrically controlled. Thighs are white and tail is rich chestnut with black tips.

The female is a duller creature, dark on crown and upper parts with vague green and bronze flashes; white or off-white below. Tail chestnut with black sub terminal band and white tips.

The nest is built entirely by female labour. The male never shows up at the nest but is not far off. Although he weighs no more than an airmail letter, he attacks with incredible ferocity any bird, however large, approaching his territory. I have seen him go for a huge mot-mot and drive it from the scene, hooting with fear and indignation.

I have watched the hen building from a range of about six feet.

She arrives with a beak full of wild cotton fibre, hovers momentarily, and sits on the nest. She then smooths the cotton into the right place turning continually and paddling the inside. She then collects a load of cobwebs with which she binds on the cotton. The whole operation is carried out at terrific speed and the nest grows as one watches, the build up finishing with a perfect white hemisphere about 1½ inches external and ¾-inch internal diameter. She then camouflages the outside with thin leaves or the skin off twigs. In it she lays two minute white eggs.

The nest sketched was nearing completion on January 23rd. The female was sitting on January 26th. The heads of the young were visible above the nest on February 11th.

Some calamity descended upon this fairy-like scene, for on February 15th, when I next visited the nest, it had been deserted and the young lay inside as completely clean skeletons.

NOTES ON SEA REPORTS RECEIVED DURING THE LAST HALF OF 1959

By W. R. P. Bourne, M.A., M.B., B.Ch., M.B.O.U.
(Edward Grey Institute, Botanic Garden, Oxford)

The last year has seen a further growth in the number and variety of sea reports received, and a further improvement in their quality. It has also unfortunately been marked by the death of one of our leading members, Cdr. C. E. Hamond, who has plotted the observations on maps for us for so long. A tribute to him appears elsewhere in this report, but I should like to say in passing how sorry I am, since he always impressed me as an exceedingly nice man and a very fine ornithologist who has done a great deal for the Society.

This unfortunate break in the continuity of administration associated with a steady growth in the volume, variety, and reliability of the notes received and a decline in the novelty of the observations from familiar areas has suggested that this is the moment for some reorganisation of our methods of dealing with the reports, and in future we now propose to treat them as follows:—

1. They are first received by our indefatigable Chairman, Captain Tuck, who acknowledges them, looks through them, makes some comments on the observations, extracts outstanding ones for quotation in *Sea Swallow*, gives the report a serial number, and passes it to Lt. N. C. Wain for plotting.

2. Lt. Wain has undertaken the arduous job of plotting the observations on maps in succession to Cdr. Hamond, and has been gradually consolidating the past and present information on to new maps where he keeps a record of the occurrence of every species of seabird in all sea-areas during the four main seasons of the year. He gave me tea and showed me his maps the other day, and I should like to congratulate him on the way he has brought them up to date so quickly while keeping them so tidy. The Society is lucky to have found so worthy a successor to Cdr. Hamond so fast.

3. He then passes the reports on to me, and I compile the annual notes for *Sea Swallow*, catalogue them, and deposit them in the library of sea reports which we have now established in the Bird Room at the British Museum (Natural History) at South Kensington, where they are available to any serious students of ornithology who may care to consult them on application to the Director.

In the past it has been our policy to include notes on every report received up to the time of publication in the next issue of *Sea Swallow* without trying to analyse the records in greater detail separately. As the number of reports and our knowledge of the commoner sea-birds and their distribution on the main shipping routes has increased this has come to involve an increasing amount of tedious and unprofitable repetition, and it now seems time to try to consolidate the notes more. We are therefore closing the present series of observations at the end of 1959 and considering the preparation and publication of a full analysis of the more important results, and propose to reorganise the annual report in *Sea Swallow* in future as follows:—

1. We are following the old method of treatment up to the end of 1959, and thereafter intend to deal with all the notes received

during each calendar year together on an annual basis in the *following* year's report, starting with 1960. This method of treatment has the disadvantage that there may be more delay before the comments on some individual reports appear, but it will allow us more time to process them, which is becoming increasingly necessary as their numbers increase, and will provide a more suitable period for analysis, since most other regular ornithological reports are also run on a strictly annual basis.

2. In future the annual report will start with an introduction discussing progress during the year and any topics of general interest which occur to us or members choose to raise, followed by any special comments which we may have to make on individual reports received during the current year right up to the time of writing. This will be followed by a list of reports received during the previous *calendar* year only and analysed in the systematic section of the report which follows, arranged in alphabetical order of observers' names without any immediate comment other than the number of pages submitted.

3. Observations of interest or points of difficulty involving particular species of birds will then be discussed in a systematic list under individual species, using the order of species, classification, and nomenclature found in the second (1955) edition of Alexander's *Birds of the Ocean*, which we recommend as the best, indeed the only, short field-guide to all seabirds at present available. We would be grateful if members could stick to these names, and not use others found in other textbooks. They should not use subspecific names unless they can produce some definite reason for identifying the subspecies.

4. It may later prove worth-while to summarise observations from the same parts of the ocean together in a further geographical section of the report, either regularly, or intermittently, as sufficient observations accumulate for each sea-area, rather as I discuss the petrels of the Indian Ocean in this report. This step among others is still only under consideration, however.

Any further comments on these proposals or suggestions for further innovations which might interest members will be received very gratefully. The Editor is still anxious to receive articles concerning their experiences, comments on observations of outstanding interest, or good photographs, directly from members for separate publication in *Sea Swallow*.

To return to progress during the last year, in addition to the eighteen or so voyages covered in the notes for the last half of 1959 which are discussed afterwards, notes on as many voyages again have already come through for the first half of 1960 which are being held over for analysis next year, so it has clearly been another record year. I have few comments on the notes which have been held over ; they include another marathon effort by Captain P. P. O. Harrison and his officers (G. Lowery, J. Piner, J. Gill and A. Batt) covering a voyage round the world ; they have now removed the reproach that they do not always describe the birds they see, and this report is now as near perfect as these things can be. Also a long invaluable series of notes from the Indian Ocean by Mr. D. M. Neale, who has been cruising around the vicinity of the Persian Gulf contemplating Persian Shearwaters, and valuable notes from a voyage across the unknown area in the central Pacific by Captain J. B. Mitchell. Lt. D. C. Springall has

sent another useful series of notes compiled on the bridge of *Protector* in the far south, and a newcomer, Cdr. M. W. B. Kerr, some contrasting notes from the Iceland patrol in the far north. Others who have sent in equally valuable but more routine reports include Captain E. F. Aikman (N. Atlantic), Lt. N. Bailey (notes and photographs of petrels from the Indian Ocean, discussed elsewhere), Mr. J. O. Brinckley (several voyages up and down the west side of the Atlantic), Captain A. J. F. Colquhoun (U.K.–Bombay), Ch./O. W. L. N. Fisken (U.K.–Persian Gulf and back via the Cape), Mr. A. Semple (U.K.–New Zealand and back via Panama), Mr. R. Walgate (western Atlantic), and Captain G. V. Wilkinson (South Australian waters ; some of his positions seem to disagree with the course reported, while surely Short-tailed Shearwaters are rather unusual in the Indian Ocean?). Congratulations to all concerned.

I have a few general comments to add to those I made last year. There has been a noticeable increase in the amount of information provided by some members about their records recently, following my rude remarks about unsubstantiated observations last year, and I should like to thank them, and exhort some others to do likewise! Every word of amplification adds to the value of all but the most routine records.

During the winter we discussed the best method of helping members make better notes concerning the birds which come aboard, which can be very puzzling at close quarters, and largely at Mrs. B. P. Hall's suggestion got out a new report form for them. The first two forms have now been filled in by Messrs. D. M. Neale and G. E. Miles for a Persian Shearwater and White-cheeked Tern which came aboard in the Arabian Sea, and have immediately confirmed how useful they can be. We now propose to start a new file for them in the British Museum, in the hope that other members may be able to make equally good use of them. Incidentally, I am now rather sorry that I did not recommend that in case of doubt members should cut one of the larger or more distinctive feathers off the bird and clip it on to the form ; if it is done carefully it should do the bird no harm, and it could be very helpful indeed in identifying it.

The Persian Shearwater died, and Mr. Neale sent me its wings and tail, bill and legs, which I have also deposited in the British Museum. These have proved most informative, confirming old suppositions that this is indeed a race of Audubon's Shearwater with a darker underwing and longer bill. Any other remains, including properly identified skeletons, which fall into members' hands are likely to prove equally informative, and I should like to exhort other members to bring them home as well. Many foreign beaches are littered with them ; they should remember that it is always easy to keep wings, tails, bills, legs, and dried bones, and frequently whole bodies as well, if they are put in the refrigerator, and quite a large number of seabirds, including especially petrels, are still only known from one or two specimens which flew aboard ships at sea. If such birds survive they should at least know how to measure them properly to determine the species and race, and I have rather unkindly made an example of Mr. Shewell in the following notes to demonstrate the pitfalls which may beset them here ; I hope the new report forms will be helpful here in future, in any case.

In conclusion, the last year has been a great success in this department, and the next promises to be an even greater one. I hope the next report on members notes will be much larger and more informative than this one, and meanwhile I wish them " Good Hunting " during the coming year.

MR. R. E. BERRY. 59/39. s.s. Border Regiment. U.K. to the Indian Ocean, Sept.–Nov. 1959. 2 pages.

Numerous flocks of white terns with pale crowns but darker napes seen fishing at 25°N. 58°E. on 8 Oct., could be one of a number of species in winter plumage; more information is urgently needed on which gulls and especially terns winter hereabouts. Most of the usual birds of the Indian Ocean were seen; Blue-faced Boobies are more likely than Red-footed in the northern Arabian Sea, and Red-necked Phalaropes are more usual than Greys along the south coast of Arabia in winter; the presence of Greys there still requires definite confirmation. Red-necked Phalaropes are actually smaller not larger than Greys, and darker above in winter, dark grey not silvery.

60/5. s.s. Iron Age. U.K. to Canada, April–May 1959. 4 pages.

A number of Pomarine and Arctic Skuas seen in migration in late April and early May among other observations.

5/E. J. O. BRINKLEY. 59/33a. s.s. Hinea. Caribbean and E. Coast of the U.S.A., Dec. 1959–Jan. 1960. 2 pages.

60/7 M.S. Batissa. Mediterranean–U.K., June–August, 1959. 8 pages. White-winged Black and Caspian Terns were seen at Tripoli, Libya, on 31 July, and White-winged Black at intervals on the way to Gibraltar until mid-Aug. One hundred Balearic Shearwaters *Puffinus puffinus mauretanicus* were seen in Algeciras Bay on 14–28 August, among many other notes of interest.

I am sorry to have to take Mr. Brinkley to task, because he is clearly one of our most careful and enthusiastic observers, but there are two points about his notes which urgently need correction. He has used trinomial or subspecific names for most birds, which he must have taken out of books, since in most cases (the Balearic Shearwater is admittedly an exception) the differences distinguishing subspecies cannot be seen in the field, and the use of subspecific names in his notes is therefore misleading; and he gives no notes at all to substantiate the things he sees. We are left wondering how much of what he saw was, like the subspecific names, deduction from the books, and how much his own observation? Could we possibly have a few more notes and less names in future? These records will then be perfect.

MR. W. P. CRONE. 60/9. s.s. Palestinian Prince, Belle Isle to Frobisher and back, E. Canada, Sept.–Oct., 1959. 4 pages and map.

Detailed notes from a most interesting area. Species seen include the Fulmar, Great Shearwater (last on 12 Oct. off S. Labrador), Sooty Shearwater, Great Black-backed, Herring, and Ring-billed Gulls (the last off Belle Isle), Pomarine and Arctic Skuas, a possible Great Skua off Belle Isle on 13 Oct. (seems unlikely), Phalaropes off S. Labrador on 27–28 Sept., Puffins, Little Auks, Razorbills, and a Gannet (again off Belle Isle). Congratulations.

CAPTAIN A. FOWLER. 60/8. s.s. Oredian, U.K. to W. Africa, Jan. 1959. 3 pages.

Useful notes with invaluable air and sea temperatures. Storm-petrels seen around 12°–17°N. and 17°W. on 11–12 Jan. could be British, Madeiran, or Leach's here at this season, though none of these usually follow ships. They need investigating further.

CAPTAIN P. P. O. HARRISON AND OFFICERS. 60/10. M.V. Cumberland, U.K.–Panama–New Zealand–Peru–Panama–U.K., June - Nov. 1959. 83 pages.

Another of Captain Harrison's magnificent, incomparable efforts ; we are running out of superlatives for them. Wilson's Petrels were first seen on northwards migration in the North Atlantic at 47°N. 24°W. on 14 June, with numbers of Great Shearwaters later. A number of Hawaiian Petrels were seen in the eastern tropical Pacific with four Pink-footed Shearwaters at 1°N. 86°W. on 29 June, doubtless like the Great Shearwaters in the Atlantic on northwards migration. Two Phoenix Petrels were seen at 21°S. 116½°W. on 6 July ; the description (dark upperparts and underwing, white body) sounds reasonable, as does that of two Solander's Petrels seen at 24°S. 122½°W. on 6 July (back and rump grey with darker 'W' markings, all underparts dark, some white towards tip of wing), except that large grey gad-fly petrels occurring in this area have recently been shown by R. C. Murphy to belong to a different, very similar species, *Pterodroma ultima* ; Captain Harrison's observations that 'W' markings can be seen on the back of this bird in life agrees with skins, and suggest a useful field mark. Innumerable birds were seen as usual off New Zealand, too many to comment on. On the way back Peale's or Mottled Petrels were seen at 44°S. 149°W., and a lot of Prions around 44°S. 132°W. in the central South Pacific. Kermadek and Cook's Petrels were seen north of Juan Fernandez, big dark storm-petrels (probably Markham's, rather than the Black?) at 20°S. 75°W., and again a multitude of birds of many species off Peru, including at first White-bellied and Grey-backed but no Hornby's Storm-petrels, the latter being met with later in thousands with Grey Noddies, dark Storm-petrels, Simeon Gulls, and Peruvian Boobies over shoals of fish at 6°S. 81°W. on 24 Oct. Finally, a Black Guillemot in winter plumage was seen when entering the Thames at 51°06'N. 1°22'E. on 10 Nov., a remarkable ending to a remarkable voyage. Congratulations to all concerned.

MR. M. E. JONES. 60/4. S.S. Malancha, U.K.–India, Dec. 1958. 2 pages.

A useful first report. Persian and Wedge-tailed Shearwaters and Jouanin's Petrel were seen in the southern Red Sea and Gulf of Aden. It is useful to have confirmation that they occur here at this time.

CAPTAIN J. S. LANDERS. 60/6. M.V. El Hak. Red Sea and Indian Ocean, April–Sept. 1959. 3 pages.

Occasional observations, including Grey Phalaropes at 14°N. 49½°E. on 23 Sept., and Common Gulls at 26½°N. 56¾°E. on 29 Sept. Both are not definitely proved to occur in these waters so more details would have been useful. Few Shearwaters were seen inshore but large numbers of dark Shearwaters and Phalaropes far offshore at 18°N. 57½°E. on 26 Sept.

DR. D. B. PEAKALL. 60/2, S.S. Orcades, San Francisco–Honolulu–Fiji–New Zealand. May–June 1959. S.S. Dominion Monarch, West Australia–South Africa, July 1959. S.S. Stirling Castle, South Africa–U.K., Aug–Sept. 1959. 36 pages.

Valuable notes from a journey around the world, again spoilt by a lack of confirmatory details concerning a number of important records. A number of Hawaiian Petrels were seen off Honolulu on 24 May. A

bird identified as a Stejneger's Petrel at 18°N. 160°W. on 25 May may have been this but might have been a Bonin Petrel ; the latter has more prominent white fringes to darker feathers in the centre of the back, and may be separable, but I am not aware that a reliable method of separating the species in the field has yet been described. A Grey-backed Shearwater was seen at 10°N. 165°W. on 26 May, and possible Pale-footed Shearwaters as well later the same day ; they would have been on northwards migration to the North Pacific here at this season. A Kermadek and Bulwer's Petrels were reported just south of the equator on 28 May (no precise position given) ; the first is described as brown above with head and underpants white and blackish primaries; the distinctive white mark towards the tip of the wing is not mentioned, which would clinch its identity. The second is described as small and all black with a long wedgeshaped tail, which seems good enough ; the species probably winters hereabouts, but this is a surprising date to see it ; there is a remote possibility that, in these waters, it might be the lost Fiji Black Petrel, known only from one specimen a hundred years old. Another Grey-backed Shearwater was seen at 31°S. 175°E. on 2 June, when it should have been in the northern hemisphere.

On the second leg of the journey Shy Albatrosses were seen at 32°S. 85°E. on 22 July and 32°S. 50°E. on 26 July between their breeding quarters in Australasia and winter quarters off the Cape, where they were seen again. White-faced Storm-petrels were seen at 32°S. 40°E. on 26 July and 4°S. 6°W. on 2 Sept., showing what a wide range they have in winter. Cory's Shearwater was reported at 32°S. 41°E. on 27 July, which seems unlikely though it does winter off the Cape. The last Wandering Albatross was seen at 10°S. 1°W. on 1 Sept., and finally a White-tailed Tropic-bird and two Noddies at 9°N. 15°W. on 4 Sept. and fifty Sooty Terns and five Noddies at 15°N. 17° 35′ W. on 5 Sept., off Cape Verde, unusually far north. A wonderful effort.

MAJOR W. W. A. PHILLIPS. 60/12. M.V. Himalaya, Ceylon to U.K., May 1959. 7 pages.

Detailed notes by a famous ornithologist from a well-known route. Among more usual records, one of the *Fregetta* Storm-petrels was seen entering the Gulf of Aden (it is still not quite clear whether both the Black- and White-bellied forms normally occur in the Arabian Sea, and more notes are needed), Balearic Shearwaters were seen flying west off Cape Bon on 23 May, and Leach's Petrel on leaving Gibraltar on 25 May.

MISS D. ROOK. 60/13. U.K.–Melbourne via the Cape, Sept.–Oct. 1959, 8 pages.

Sooty, Great and Cory's Shearwaters, British and Wilson's Storm-petrels, a variety of terns and a party of Phalaropes were seen off Iberia and West Africa on autumn passage, as is usual at this season. A Sooty Albatross and a possible Cory's Shearwater were seen at 14°S. 2°E. on 21 Sept. and a Wandering Albatross next day. Cape Gannets and Cape Pigeons were seen from 30°S. on 24 Sept. A small shearwater at 31°S. 41°E. on 30 Sept. seems more likely to have been a Little than an Audubon's, if these species can be classified apart at all, which I doubt. A useful effort.

CH./OFF. T. SCOTT. 60/1. s.s. Captain Cook, U.K.–Panama–New Zealand–Australia–Suez–U.K. May–Aug. 1959. 10 pages.

The valuable series of notes we have come to expect from this observer, with full details of barometric pressure, air and water temperatures. Great Shearwaters were seen on northwards passage in the western North Atlantic. A Leach's Petrel came aboard in bad shape at 2°N. 86°W. on 7 June off Panama ; probably an immature bird spending its first summer in the winter quarters. Grey-backed Shearwaters were seen in numbers at 12 - 15°S. 105 - 110°W. on 11–12 June, one again coming aboard, and four Pink-footed Shearwaters at 20°S. 120°W. on 14 June ; the latter is rather surprising, as is a potential Gould's Petrel at 34°S. 115°E. on 12 July ; it is more likely to be something like a Prion, Blue, or Soft-plumaged Petrel there. A Schlegel's Petrel flew around the ship all morning at 24°S. 98½°E. on 17 July, and others were seen on the next two days to 18°S. 83°E. Unfortunately no descriptions are supplied to confirm any of these or other important records ; they would have been particularly valuable in the case of the two birds which came aboard, cases crying out for the use of our new forms if there ever was one!

MR. A. SEMPLE. 59/38. s.s. Stratheden. Notes from the Arabian Sea and waters south of Australia, Sept.–Oct. 1959. 2 pages.

A useful series of notes from an observer who although still somewhat uncertain of his identifications gives adequate confirmatory details for a change. It is perhaps worth repeating that there are still no absolutely certain records of Sooty Shearwaters or British Storm Petrels, or for that matter Grey Phalaropes, from the Arabian Sea ; we discuss the identification of dark petrels seen here elsewhere, while the dark, white rumped storm-petrels are normally Wilson's, the Phalaropes Red-necked. A possible White-headed Petrel at 35°S. 138°E. on 5 Oct. seems likely, but a description would have confirmed it.

MR. G. W. SHEWELL. 60/3. s.s. Neocardia, notes from the Far East, July–Sept. 1959. 2 pages.

A dark storm-petrel was seen in cyclonic weather at 16°N. 94°E. on 4 Aug., an area where any storm-petrel is unusual. If entirely dark it is most likely to be Swinhoe's Storm-petrel, now usually regarded as a race of Leach's ; otherwise Wilson's seems very much more likely here at this season, but it has a white rump. A " phalarope in winter plumage " was blown aboard at 18°N. 93°E. next day. The measurements are compared with the range given for phalaropes in the " Handbook of British Birds " and my own series for White-faced Storm-petrels in the table (original measurements in open print, my interpolations in brackets).

It will be seen that they do not agree with any of them exactly, and that they are possibly more similar to the Storm-petrel than the phalaropes, except for the short tail and tarsus, and are closer to the Grey Phalarope than the Red-necked. The description mentions that the webbing was white between the toes ; phalaropes' toes are lobed, not webbed, but the storm-petrel has yellow webs ; a scale drawing of the head suggests that the whole culmen measured 0.8ins., and was rather slender, which could agree with a Red-necked Phalarope, but also shows distinct nostrils and a slight hook at the tip, which agrees much better with the storm-petrel. Any of these birds would be new

for the area, but could occur ; it is virtually impossible to decide on the present evidence which the bird was, unfortunately. I have discussed this record here in such detail in order to try and demonstrate the extreme importance of trying to record really accurate descriptions and measurements of such birds wherever possible ; the new report forms for birds examined in the hand should help people to do this in future.

In case I sound too critical, I might add that Mr. Shewell has supplied much better notes of this bird than most other people of other birds which have come aboard, which is why I have chosen to discuss it, and I congratulate him on this.

	Wing	*Tail*	*Tarsus*	*Bill*
Bird in Question	(160mm.) 6¼ins.	(57mm.) 2¼ins.	(15mm.) 0.6ins.	(20mm.) 0.75ins.
Grey Phalarope .	126 - 141m.m. (5¼ins.)	56 - 61mm. (2¼ins.)	20 - 22m.m. (0.8ins.)	20 - 25mm. (0.9ins.)
Red-necked Phalarope ...	106 - 118m.m. (4¼ins.)	43 - 47mm. (1¾ins.)	19 - 21mm. (0.8ins.)	20-24.5m.m. (0.9ins.)
White-faced Storm-petrel .	154 - 165m.m. (6¼ins.)	73 - 80m.m. (3ins.)	40 - 46mm. (1.7ins.)	16 - 18m.m. (0.7ins.)

CHIEF ENGINEER R. L. TUCKER. 60/11. M.V. Foylebank. Port Said–India–Ceylon–Cape of Good Hope–Cape Horn–western South America –central Pacific, Jan.–Oct. 1959. 13 pages.

Detailed notes covering an enormous area, so that it is difficult to pick out highlights. The British Storm-petrels seen off the Cape in March were doubtless correctly identified. Hornby's Storm-petrels were seen at 39°S. 74°W., which seems a bit far south for them. Four Buller's Albatrosses are reported off Antofogasta without details on 15 April, and a vast variety of species as usual between Mollendo and Callao, the largest number of birds the observer had ever seen. Hawaiian Petrels were seen between 4–6½°N. and 142–102°W. on 2–10 Oct. It would have been nice to have a few confirmatory notes on all these records, and it seems rather unlikely that Black-headed Gulls would have been seen anywhere in the Americas, if the European Black-head is intended.

NOTES ON LAND BIRDS AT SEA

Summarised by CAPT. G. S. TUCK, D.S.O., R.N.

Land bird report sheets have been received from thirteen members at sea.

One has only to glance through these reports to appreciate the interest which the unexpected arrival and, very often, the opportunity for close scrutiny of these ship visitors affords.

Over a short period it is not possible to point to any particular conclusions from these interesting records, but this in no way detracts from their value as a contribution to ornithology.

Some reports indicate the passage of a ship across the broad stream of well-established migration routes. Others, however, show clearly the many land birds that occur far out to sea. How many and what species may be following routes as yet imperfectly known, and how many are castaways set far out to sea by contrary winds are matters which in time these reports may help to clarify. One thing is certain—a ship at sea is a haven of rest for many exhausted birds, and once on board they are sometimes carried hundreds of miles off course by their unwillingness to leave this safe refuge.

Rarely land birds have been recorded taking passage all the way from one continent to another—A Myrtle Warbler was carried from Canada to England last year, and the case of the three Indian Crows is described in this number. But these passages must be exceptional. Unless birds are the type that can find an acceptable diet on board, and we can quote the unusual case of a Peregrine Falcon remaining a whole week at sea and leaving its perch daily to capture Storm Petrels following in the wake, they rapidly grow weaker and do not survive more than a few days.

The establishment of a new species in a country, particularly if its home of origin was far to the east or west of its new territory, at once causes speculation.

The Cattle Egret is a case in point. A bird of South Western Europe and South Africa, it has established itself in the South Eastern States of North America.

In British Guiana the Cattle Egret (*Bulbulcus ibis*) has now taken over 90% of the nests in the long-established Heronry in the Botanic Gardens at Georgetown.

Any records of this bird from the Atlantic would be of particular interest.

PRESENTATION OF LAND BIRD REPORTS

We are adopting a new method. Instead of commenting on each member's passage report as a whole, we are extracting individual serials and grouping them together under Ocean Areas and in chronological sequence of dates. This certainly breaks up a member's sheet, but we feel that the pattern of land bird movements in the various oceans may be more apparent. If we leave out some of the serials members will realise that we are guided by the importance of the report and the area in which it occurs.

LAND BIRD REPORTS

NORTH ATLANTIC

1959—

13th MAY. Capt. A. Fowler. 34°23'N., 13°07'W., 200 miles N.E. of Madeira and 220 miles N.W. from the N.W. point of Morocco.

An interesting report of the arrival on board at 1800 hours of a Little Egret *(Egretta garzetta)*. The bird was in first class condition and must have departed before daylight.

19th AUGUST. A/S A. Semple. 48°N., 06°W., Western Approaches.

Semple captured a Redstart *(Phoenicurus phoenicurus)* and a Racing Pigeon, reporting the ring number of the pigeon to the R.P.A.

20th AUGUST. 45°N., 09°W. in Bay of Biscay, 120 miles N. by W. of Corunna.

Semple had an injured Reed Warbler *(Acrocephalus scirpaceus)* brought to him by a crew member.

30th AUGUST. S/E J. O. Brinkley. Off Lisbon in thick fog.

A White throat *(Sylvia communis)*, Wheatear *(Oenanthe oenanthe)* and a Pied Flycatcher *(Muscicapa hypoleuca)* on board. The latter caught and ringed (N.I.O. 2902). A Turnstone *(Arenaria interpres)* circled ship.

9th SEPTEMBER. Mr. D. B. Peakall. 42°08'N., 9°40'W., 230 miles West of Oporto, Portugal.

A Turnstone on board.

The above two reports point to Turnstones on southward migration.

27th - 29th AUGUST. Second Officer W. P. Crone. Belle Isle Strait, Newfoundland, and later in St. Lawrence River. Dense fog.

Crone reports an invasion of warblers. Amongst a number of unidentified species there occurred several American Pipits *(Anthus spinoletta)*, Myrtle and Magnolia Warblers *(D. coronata and D. magnolia)* and more than twenty-four Pine Warblers *(D. pirrus)*.

29th - 30th SEPTEMBER. Hudson Strait, South of Resolution Island.

Crone reports 100+ Snow Buntings *(Plectrophenax nivalis)* passed close across the bow flying steadily N.E. On the same day in Frobisher Bay a large number of Tree Sparrows *(Spizella arborea)* came aboard.

1960—

2nd FEBRUARY. Commander M. W. B. Kerr, R.N. On Arctic Circle fifteen miles off N.E. point of Iceland.

A Meadow Pipit *(Anthus pratensis)* was on board for two days, living in the Sick Bay and taking breadcrumbs for food.

22nd MARCH. Capt. E. F. Aikman. 550 miles west of the Bishops Rock.

A most unusual report of an Oyster Catcher *(Haematopus ostralegus)* flying close round the ship far out in the N. Atlantic. Curiously enough it departed flying steadily westwards.

1st MAY. Capt. P. P. O. Harrison. 10°48'N., 76°13'W., 50 miles off the Colombian coast.

A Lesser Yellow Legs *(Tringa flavipes)* was killed as it hit the ship's superstructure.

2nd MAY. Capt. P. P. O. Harrison. Off Aruba.

A Reddish Egret *(Dichromanassa rufescens)* observed.

9th MAY. Staff Commander R. Walgate. Mid. N. Atlantic 53°N., 30°W. to 48°N., 46°W.

A most interesting report of an invasion of over 1,000 Snow Buntings. See "Reports from the Oceans."

MEDITERRANEAN

1959—

MID-JUNE TO LATE AUGUST. S/E J. O. Brinkley. Central and Western Mediterranean.

Brinkley's report includes many species common in this area, but is none the less valuable. Detailed list is not quoted here.

25th SEPTEMBER. Apprentice R. E. Berry. Off Tenes in sight of Algerian Coast.

An Egyptian Nightjar *(Caprimalgus aegyptius)* rested on board all day. Other common species not quoted.

RED SEA

1959—

29th AUGUST. A/S A. Semple. Off Jidda, Central Red Sea.

A Peregrine Falcon *(Falco peregrinus)* was perched on board for twenty-four hours, and using a perch just below the peregrine for the same period was a Hoopoe *(Upupa epops)*. The Hoopoe frequently left its perch and flew in and out of the decks.

SEPTEMBER. Capt. J. S. Landers.

The report covers the whole of September in the central portion of the Red Sea, with many Southward bound migrants crossing the area. Amongst land birds seen, the following settled on board and were identified: Madagascar Bee Eater *(Merops superciliosus)*, Bee Eater *(Merops apiaster)*, Swallows *(Hirunda rustica)*, Alpine Swift *(Apus melba)*, Hooded Vulture *(Necrosyrtes monarchus)*, Hoopoes *(Upupa epops)* and Rollers *(Coracias garrulus)*.

25th OCTOBER

A/S A. Semple reports a Bee Eater *(Merops apiaster)* on board in the southern end of the Red Sea.

INDIAN OCEAN

1959—

22nd OCTOBER. A/S A. Semple. 15°50'N., 58°30'E., 250 miles S.E. of Kuria Muria Islands.

A Yellow Wagtail *(Motacilla flava)* came on board for two days, took no food and died.

15th OCTOBER. A/S A. Semple. 01°05'N., 56°05'E., 200 miles N. of Seychelle Islands.

Three Swallows *(Hirundo rustica)* on board for 39 hours. Very tame, ate flies. Departed N.E.

ARABIAN SEA

GULF OF OMAN

PERSIAN GULF

1959—

8th - 9th OCTOBER. Apprentice R. E. Berry. 25°22'N., 57°54'E., North coastline of Gulf of Oman.

A Hoopoe on board. An immature Purple Heron flew round ship and then made the mistake of landing in the sea. It took off at once!

From 7th to 10th OCTOBER a Red-necked Nightjar *(Caprimulgus ruficollis)* visited his ship, and a Greenish Warbler *(Phylloscopus trochiloides)* closely observed within a few feet, also on 10th OCTOBER.

1960—

6th APRIL. Chief Officer W. L. N. Fisken. 50 miles east of Masira Island.

Two Dotterel *(Charadrius morinellus)* came on board for about an hour and departed westwards. Six Blue-headed Wagtails *(Motacilla flava)* were on and off the vessel all day catching sand flies on deck. Wind laden with sand. These birds or others were with the ship during its passage to the head of the Persian Gulf on various days until 15th APRIL.

Chief Officer Fisken's report contained a number of other entries not quoted.

REPORTS FROM THE OCEANS

AN IMPRESSION OF GUANO BIRDS OFF PERU

Captain Barry Mitchell, M.V. "Yewbank," sends this account of his impressions off the coast of Peru. Writing from Chicama, Peru, on 18th February, 1960, he says:—

"The local coast here is swarming with all the indigenous birds, pelicans, boobies, cormorants etc., but I understand in considerably less numbers than of yore. The main reason for this may well be the greedy and improvident growth of the fish manure industry which is at present more profitable than the guano industry. The fish are being harvested by high powered modern industrial methods regardless of posterity.

The most fascinating thing about these "convoys" of guano birds is their gregarious nature. Never anywhere else in nature can one observe convoys of birds obviously under leadership in such mixed variety. Pelicans, gannets and cormorants fly in perfect flight formations as one body at specific height, course and speed. Leaders drop back only to be replaced by others who take the lead regardless of species.

As the ship crosses the convoy at speed the birds bend and bend across the bows until they fly nearly parallel to the ship's course. Then some bright bird further aft sees an opening under the stern, the spell is broken, the tail of the convoy swiftly breaks off, reforms, and rejoins the main fleet further astern.

The outward bound convoys fly high at about one hundred feet, perhaps scanning for fish, but it is the homeward bound flocks, flying at sea level, gorged with fish, which manoeuvre in this fascinating way."

HOW FREQUENTLY DO BIRDS OBTAIN "ASSISTED PASSAGES" FROM CONTINENT TO CONTINENT?

Perhaps the most unique assisted passage yet recorded occurs in the meteorological log of M.V. "Travince," Hain Steamship Co.—Captain F. G. Bolton.

Captain Bolton writes:—

"At 06.30 on 10th May, 1959, as the ship left Colombo it was accompanied by dozens of Indian Crows. By evening, four crows were seen roosting on the after end of the boat deck near the galley. Six days later one of them had disappeared. Later, on 21st May, it was found dead in number two bilge having flown or been blown down a ventilator. These crows are very inquisitive by nature.

By this time the remaining three were frequently taking flights all round the ship. They remained mute until 20th May when they were heard croaking for the first time, and in a very short time were in full song.

From 22nd May, by which time the ship was accompanied by a considerable number of Albatrosses, the crows remained very close to the ship, perhaps nervous of such large companions.

No attempt was made by them to leave the ship either off Cape Leuuwin, Western Australia, or when five miles from Cape Otway (Victoria). The three crows were still flying around the ship inside Port Philip Bay and disappeared only when the ship reached Geelong (Victoria) on 29th May."

SALUTE TO A PRINCE

21st February, 1960. M.V. "Cumberland" (New Zealand Shipping Company Ltd.), Captain P. P. O. Harrison, was entering Sydney harbour, his ship dressed overall with flags in honour of the birth of Prince Andrew.

As the ship approached Sydney Bridge six Kookaburras perched on the stays. Perhaps the colours of the fluttering bunting had attracted the birds. Suddenly, and with one accord, this uninvited guard of honour broke into a chorus of joyous "Laughs."

(Note by Editor:—Although known as the laughing Jackass the Kookaburra rarely obliges and is seen more often sitting mute for hours at a time.)

SWALLOWS OFF THE COCOS ISLANDS—INDIAN OCEAN

A/S A. Semple writes:—

"In October, 1959, two swallows came aboard in an exhausted state off the Cocos Islands, and at dusk they were roosting on the top of the door leading to the hospital ward.

At 05.30 next morning I picked them from the door and put them in an empty cabin. But how to feed them? In the hold we were carrying a cargo of uncleaned wool and here were "Bluebottles," so down the hatch I went to catch a few.

I released a fly in the cabin and both birds chased it at once. Thereafter I caught flies five times a day and soon the swallows would fly on to my shoulder as I entered the cabin and take the flies from my hand. Thirty hours later we reached Colombo and the birds flew ashore.

(Note by Editor:—A charming photograph of both swallows perched on Semple's hand accompanied this report.)

THE RED-FOOTED BOOBY COMES ABOARD AGAIN

This rather foolish bird has already established itself on our panel of ship visitors. Chief Officer T. B. Scott's report this year of five Red-footed Boobies making themselves at home on board for twenty-four hours as his ship approached the coast of South America is certainly the largest deputation that we have heard of as yet.

SNOW BUNTINGS IN DISTRESS

From report by Staff Commander R. Walgate.

On 9th May, 1960, S.S. "Empress of England" was in the middle of the North Atlantic in 53°N., 30°W., roughly 1,000 miles from the nearest land in any direction. A moderate gale was blowing from N.N.W. and the ship steaming sixteen knots on a S.W. course.

At 10 o'clock in the forenoon about a thousand Snow Buntings appeared and began alighting on the after end of the boat and promenade decks. On arrival they were quite lively, running quickly here and there. They could be approached closely and were obviously wanting food, eating breadcrumbs eagerly and drinking from the pools of rain water about the decks.

All through the day they stayed with the ship but had difficulty in remaining "grounded," with such a high relative wind over the decks. Twittering mildly when startled into flight by passengers who

approached too close they became weakened by the constant buffeting of the wind, and were swept astern and gradually one after another were unable to regain the ship although it was quite clear that they did not want to leave.

By midnight "Empress of England" had increased speed to twenty knots and held this speed on a S.W. course from then on.

Next morning only five Snow Buntings remained, and these had been carried S.W. for some 480 miles. The wind had remained persistently in the N.W. gradually easing from force 8 to force 4. It would seem that none could have survived to reach land.

Commander Walgate comments that before the buntings arrived a series of depressions with S. Westerly winds had been crossing the Atlantic. He suggests that this flock was part of a migration passing up the east coast of North America and blown far out to the eastward. They had arrived in the airstream from the North caused by a depression South of Iceland. All the birds seemed eager for a westerly lift, making every effort to regain the ship as it steamed rapidly South West.

A METHOD OF DISTINGUISHING BETWEEN HERRING OR YELLOW-LEGGED GULLS ON THE ONE HAND AND LESSER OR GREATER BLACK-BACKED GULLS ON THE OTHER HAND WHEN VIEWED FROM BELOW

S/E J. O. Brinkley observes that the difference between these species can be established when viewed in flight from below against the sky.

In the case of the Herring and Yellow-legged species the underwing-tip dark pattern is confined to a repetition of the upper surface pattern, and forms a small dark crescent. In the case of the Black-backed Gulls the undersurface dark patch is much larger.

We have not seen this point stressed before. As these gulls are often observed at sea under these conditions we should welcome comments from other observers.

FURTHER NOTES ON THE PELAGIC OBSERVATION OF AUKS IN THE NORTH ATLANTIC

(Note by Editor :—In "Sea Swallow," 1958, we published the results of five years' observations of the occurrence of Auks outside the 100 fathom line in the North Atlantic compiled by Captain E. F. Aikman, and covering passages on varying routes from U.K. to the St. Lawrence River. A further series of observations carried out by Captain Aikman is reproduced below.)

Reference: *Sea Swallow*, 1958. Distribution Chart.

SUMMARY OF OBSERVATIONS

Month	*No. of Voyages*	*Remarks*
January	2	47N, 46W (1960). E track. Guillemots and Dovekies (most) seen frequently.
February	1	100 miles east of Flemish Cap (1960). One Guillemot.

Month	*No. of Voyages*	*Remarks*
March	3	44½N, 45W (1958). D track. Four Guillemots, ½-doz. Dovekies.
April	4	47N, 47W (1958). E track. Dovekies and Guillemots seen frequently in groups up to two dozen. 45N, 46W (1959). D track. Six Guillemots in group, others singly. Six Dovekies. 46N, 48W (1959). E track. Many Guillemots in groups of ½-doz. One group of ½-doz. Dovekies.
May	4	100 miles east of Flemish Cap (1959). E track. Very many Auks mostly Dovekies with a few Guillemots. 51N, 37W (1959). Cape Race to Pentland Forth. One Guillemot. 58N, 14W (1959). Cape Race to Pentland Forth. One Guillemot. 48½N, 47W (1960). F track. Guillemots and Dovekies very common in groups up to one dozen.
June	4	None sighted.
July	3	52½N, 51W (1959). E track. Two Guillemots, six Dovekies.
August	2	None sighted.
September	1	53N, 52W (1959). Belle Isle to Pentland Forth. Three Guillemots.
October	1	52½N, 51W (1958). G track. Hundreds of Auks, mostly Dovekies, some Guillemots heading S to SW. Wind NW force 8.
November	3	50½N, 32½W (1958). G track. One Guillemot.
December	3	46½N, 47W (1957). E track. Three Guillemots.

Over this period there have been fifteen observations of Auks outside the 100 fathom line. There are only three observations east of 40W.

Comparing the two series of observations I find that of fifteen observations east of 40W, six were obtained on eighteen voyages via Inistrabull and nine on fifty-five voyages via Fastnet. It seems that the chance of sighting Auks east of 40°W. is considerably greater on the northerly routes.

My 1952/57 notes showed most sightings in April, May and November with none in July, August and September. The 1957/60 notes again give most sightings in April (3) and May (4), none in June and August and one in each of the remaining months.

I am now of the opinion that as far as Guillemots and Dovekies are concerned the whole area from Cape Race as far east as Flemish Cap is part of their normal range, at least from November to May. When crossing this region in daylight during these months Auks are almost invariably seen.

The reservation on the accuracy of identification between Guillemots and Razorbills again applies. It is very difficult to distinguish between them at sea with certainty.

I would be very glad if any other ornithologist who may have experience of this part of the North Atlantic would comment on these notes.

THE PETRELS OF THE INDIAN OCEAN

By W. R. P. Bourne

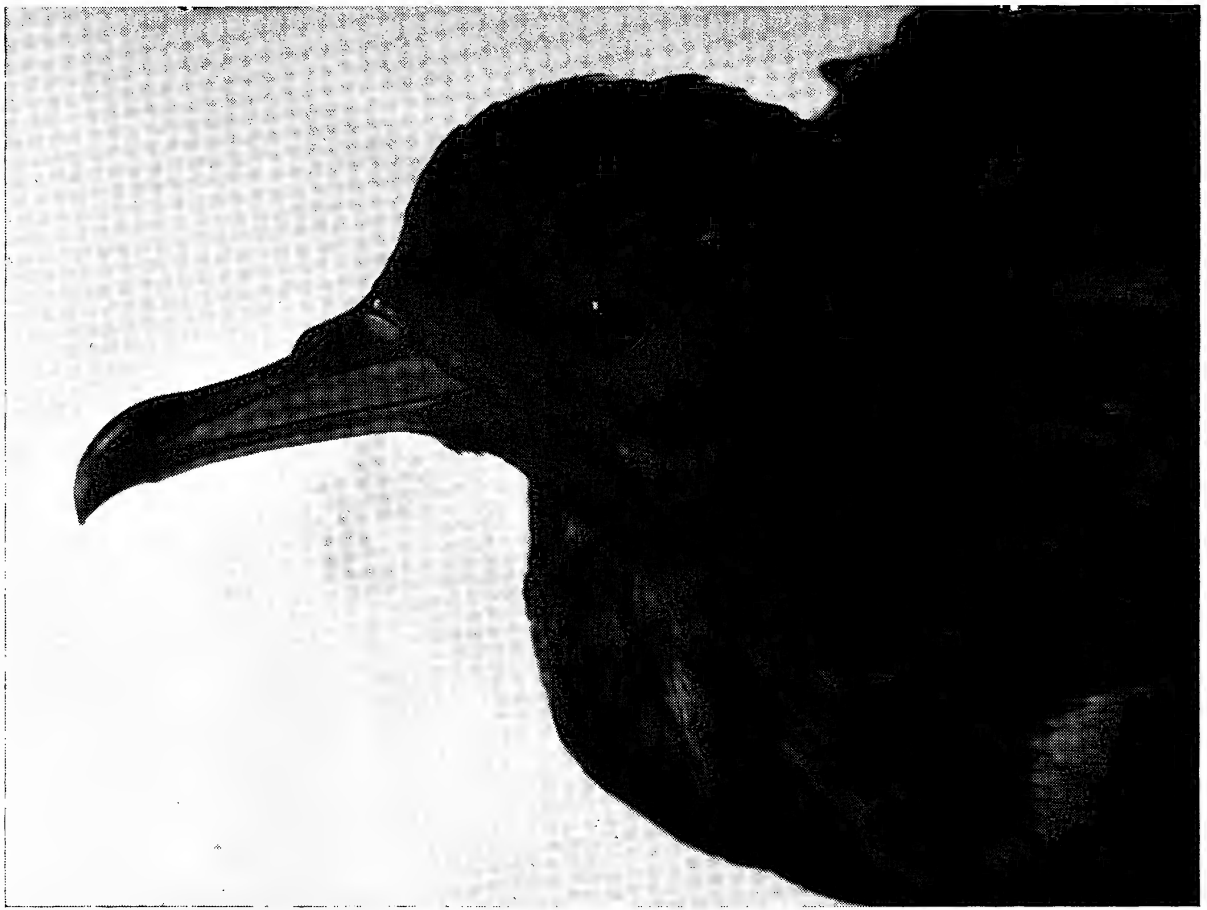
The petrels of the Indian Ocean and adjacent waters have never been properly investigated in the past, and while some species have been overlooked until very recently, others have been recorded erroneously, so that considerable confusion prevails in the literature over what really does occur, perhaps more than for this or any other group of seabirds in this or any other ocean. Since one of our members, Lt. N. Bailey, has now produced two very nice photographs of the two most difficult species to identify, Jouanin's Petrel and the Wedge-tailed Shearwater, this seems a most appropriate moment to try and produce a comprehensive summary of what is actually known about the group in the area. I am very grateful to the various friends and correspondents who have made this possible, many of them members of the R.N.B.W.S., and especially Lt.-Col. C. L. Boyle, whose notes first caused me to take an interest in the seabirds of the area, Captain W. F. J. Morzer Bruyns, M. Christian Jouanin, Mr. D. M. Neale, Major W. W. A. Phillips, and Lt.-Cdr. G. S. Willis.

As usual, a clue to the understanding of the distribution of seabirds in this as any other area is provided by a study of the oceanography, since the birds' distribution depends on that of their food, the fish and cephalopods in the sea, this in its turn is controlled by the amount of plankton in the water, and this depends on the amount of mixing and upwelling taking place and bringing nutrient salts up to the surface from the ocean depths. The Indian Ocean can be divided on the basis of its oceanography into three main areas attracting different types of seabird:—

In the far south the Indian Ocean proper borders on the subantarctic west-wind zone of the Southern Ocean, where continuous gales among other factors promote much mixing of surface and deep water, the development of a rich plankton, and in consequence the occurrence of a large sea-bird community. This includes many petrels common to both the South Atlantic and southern Indian Ocean which are commonest in our area off the coasts of South Africa and southwest Australia, but also occasionally wander north to Madagascar, the Mascarene Islands, and even the vicinity of Keeling Cocos where a cool current sets north off the west coast of Australia, although they do not normally penetrate the area of warmer surface water further north.

Most of the central Indian Ocean is occupied by barren tropical surface water and supports few seabirds of any sort except where turbulence occurs around the island groups and in the area of convergence between the equatorial currents and counter-current. Large sea-bird colonies are found in this region at some of the tropical archipelagoes such as Assumption, Aldabra, Chagos, Cocos Keeling, or Christmas Island, but these involve mainly terns, tropic-birds, frigatebirds, and boobies, and few petrels except those passing by on migration.

More petrels are found again further north around Java, Ceylon, the Maldives and Seychelles, to a lesser extent along the coasts of Malaysia, India, and East Africa, and especially off the southern coasts of Somaliland, Arabia, and Baluchistan and in the approaches to the Red Sea and Persian Gulf. The development of the monsoons causes an offshore drift of surface water associated with much upwelling and



Photograph by Lieut. N. Bailey, R.N.

Wedge-tailed Shearwater (*Puffinus pacificus*). Caught on board at night on 27th May, 1960, at 09° 25′ N., 66° 24°E. Notice the long, slender bill and nostrils normally held pointed forwards and not downwards in flight characteristic of the diving shearwaters of the genera *Puffinus, Procellaria* and *Adamastor*. The colour varies ; in the dark phase of this species the bill is usually dark grey and not pink or green as has been reported in the past.

the development of a rich marine fauna at different seasons throughout this region, the effect being strongest off the south coast of Arabia, where it lasts throughout the year, and the exceptionally rich food-supply in this last area is exploited by a very large community of seabirds, including not only resident terns, boobies, a tropic-bird, a gull, and a cormorant, but at least two resident petrels and at different seasons at least six migrant petrels and probably a skua from the south, and a variety of migrant gulls, terns, skuas, and phalaropes from the north.

The notes collected by members of the R.N.B.W.S. among others have already made the status of the different petrels throughout this area fairly clear, though we are still continuing to work out their distribution and annual cycles in detail, and it appears to be as follows:—

SUB-ANTARCTIC SPECIES. Albatrosses occur commonly off South Africa and south-west Australia, straying north especially in winter towards the southernmost island groups, one or more species having occurred at times in Madagascar, Réunion, Mauritius, and the vicinity of Keeling Cocos. The most usual seem to be the Wandering, Black-browed, Yellow-nosed, and Sooty *(Diomedea exulans, D.melanophris, D.chlororhynchus* and *Phoebetria fusca)*, with occasional Shy Albatrosses *(Diomedea cauta)*, presumably on passage to the important wintering area off the Cape, and Grey-headed and Light-mantled Sooty Albatrosses *(Diomedea chrysostoma* and *Phoebetria palpebrata)*, though these usually stay further south. Giant, Brown, White-chinned and Silver-grey Petrels *(Macronectes giganteus, Adamastor cinereus, Procellaria aequinoctialis* and *Fulmarus glacialoides)* come with them as far as the Mascarene Islands at least; the Cape Pigeon or Pintado Petrel *(Daption capensis)* comes far north towards the equator in the west, and one has been collected in Ceylon while we have unconfirmed sight records from the Arabian Sea, though it is certainly rare there. Most of the small sub-antarctic petrels, including the Blue Petrel *(Haloebena coerulea)*, Diving Petrels *(Pelecanoides sp.)* and Grey-backed Storm-petrel *(Garrodia nereis)* seem to stay far south, but the Prions *(Pachyptila)*, apparently usually the Broad-billed Prion *(P.vittata)*—identifications of this group can rarely be relied upon even when they come from museums—also sometimes come far north, odd birds having reached Malaysia, Madagascar and the Comoro Islands, while G. S. Willis, who knows them well, has produced a convincing sketch of a couple seen at sea near the equator off East Africa. Finally, while the Little Shearwater *(Puffinus assimilis)* and Great-winged Petrel *(Pterodroma macroptera)* which breed in the winter in south-west Australia and at least in the past at St. Paul and Amsterdam Islands do not seem to be recorded much further north, and probably disperse southwards in summer, two other gad-fly petrels, Schlegel's and the Soft-plumaged Petrels *(Pterodroma incerta* and *P. mollis)* which may once have bred with them on St. Paul and Amsterdam and certainly still do on Tristan and Gough Island have been reported far north towards the tropics by a number of observers off west Australia, and may well be regular there.

However, none of these southern cool-water species can really be regarded as normal inhabitants of the greater part of the Indian Ocean, though they might occur rarely as strays, and I will confine the main discussion to species normally penetrating the area of warmer surface water in this or other oceans.

PALE-FOOTED SHEARWATER *(Puffinus carneipes)*. This is essentially an Indo-Pacific representative of the Atlantic Great Shearwater *(Puffinus gravis)* ; the Pink-footed Shearwater *(Puffinus creatopus)* of the east Pacific amounting to little more than a pale race. The Indian Ocean population breeds on islands off south-west Australia in the summer, and has been taken at sea off Amsterdam Island and collected in South Africa then though there is no evidence yet that it has ever bred there, and migrates north to moult during the southern winter throughout the northern part of the Indian Ocean. The northwards movement starts during May, and birds have been seen flying north-west through the central tropics then. It seems to occur around the central archipelagoes such as the Seychelles and Maldives about June and July, and reaches the vicinity of Java, Ceylon, and the south coast of Arabia by midsummer, birds in moult having been collected in the last two areas about then. It appears to concentrate off the Arabian coast especially in late summer, about August, but leaves in September, when numbers have been seen on the return passage off Cochin and I know of no reliable records north of the equator in the northern winter.

In appearance it is a large, heavily-built uniform chocolate brown shearwater with a long, thick straw-coloured bill with a dark tip, flesh-coloured legs, long, moderately slender wings which it holds straight in flight, and a short, round tail. It flies rather heavily low over the water with a series of flaps followed by a glide, and settles, swims, and dives freely. It can be distinguished from all other dark petrels in the northern part of the area by the pale bill. In the south it might be confused with the White-chinned Petrel, which is much the same size and also has a black and yellow bill, but the latter usually has some white on the chin and has broader wings, a longer, more pointed tail, and a more buoyant, swooping, soaring flight, and usually stays further south over colder surface waters.

WEDGE-TAILED SHEARWATER *(Puffinus pacificus)*. Breeds in the southern summer at all the Mascarene Islands, the Seychelles, Cocos Keeling, islets off west and north-west Australia, and probably Chagos and Carajas Cargados. It is fairly common at sea throughout the area south of the equator then, but apparently scarcer in winter, when it becomes commoner in the area to the north up to the southern Red Sea, specimens having been taken in moult then off Java, Ceylon, and Socotra, where it seems to be scarcer in the northern winter. Thus it seems quite likely that the majority of the birds in the Indian Ocean breed in the south and moult in the north. Some birds have been reported in the vicinity of the Gulf of Aden throughout the year, however, and while the winter records may refer to young birds from the south summering in their winter quarters, it seems possible that there may be a resident population in this area which may breed somewhere around Socotra or the southern Red Sea Islands, and this possibility deserves further investigation.

This is a very variable species occurring in both light and dark phases and different individuals could be mistaken for most of the other birds entering the area. In the more usual dark phase it is uniform dark chocolate brown all over, and appears slightly smaller, darker, and more lightly built than the last species, with a long, slender, grey (*not* green or flesh-coloured) bill, flesh-coloured legs, fairly long, rather broad wings, and a long, wedge-shaped tail. It also flies faster and more

easily, rising higher over the water with more slow flapping, swooping and soaring and less fluttering and gliding, and while it also settles on the water fairly often swims and dives less freely. The scarcer pale phase occurs at one colony at Shark's Bay, West Australia, in our area and may possibly disperse quite widely at sea outside the breeding season in which case it could account for some of the records of unidentified pale-breasted petrels recorded elsewhere in the Indian Ocean. It resembles the dark phase but is slightly paler above with a white underwing and underparts and sometimes a pale flesh-coloured bill. Both phases can be told from all gad-fly petrels by their longer, more slender bills, and from all shearwaters except the larger southern White-chinned Petrel and northern White-faced Shearwater, both of which have distinctive face-markings, by their soaring flight and long wedge-shaped tail. They are particularly likely to be confused with the equally variable Trinidade Petrel, which probably has a rather similar range at sea, but can always be distinguished by their slower flight and longer bills ; the pale phase of the Trinidade Petrel is also more mottled below.

SHORT-TAILED SHEARWATER *(Puffinus tenuirostris)*. This species breeds in huge numbers around south-east Australia in the southern summer and migrates north in the Pacific to moult around the Aleutians, returning south by way of California. Theoretically it should not enter the Indian Ocean at all, but single individuals have been washed up at the time of the northwards migration in Ceylon and near Karachi ; possibly they wandered too far west during the summer, and migrated north in the wrong ocean by accident. The closely related Sooty Shearwater *(Puffinus griseus)* seems equally likely to do the same thing in future, though there are no records for the Indian Ocean yet, and both must be watched for there. Both are heavily-built dark grey shearwaters with slender dark grey bills, bright blue-grey feet, long, slender wings held straight in flight, and short, round tail, flying low over the water with a series of rapid wing beats followed by a long glide, and swimming and diving freely. The Sooty is larger and usually pale under the wing, the Short-tailed smaller with a shorter, more compact bill, and usually dark under the wing, though both may vary in this. They differ from other dark petrels of the Indian Ocean by their greyer coloration and grey feet, from all except the Pale-footed in their short tails, and from the latter in their slender, dark bills.

WHITE-FACED SHEARWATER *(Puffinus leucomelas)*. A west Pacific representative of the Mediterranean Shearwater *(Puffinus kuhlii* [= *diomedea*] *)* which breeds around Japan and the Pescadores in the northern summer and moults around the East Indies in winter, some occurring there throughout the year. It apparently strays west through the Malacca Strait fairly frequently, and has been collected in Ceylon and seen west to the Maldives. In appearance a large, loosely-built shearwater, brown above with a heavily streaked white face and pure white underwing and underparts, a fairly long horn-coloured bill and flesh-coloured feet, long, fairly broad wings held slightly angled in flight, a fairly long wedge-shaped tail and a very free, easy, swooping, soaring flight, rising high over the water. It is most likely to be confused in the Bay of Bengal with the pale phase of the Wedge-tailed Shearwater, but the latter is smaller with no streaking on the face.

AUDUBON'S SHEARWATER *(Puffinus l'herminieri)*. The only small brown and white shearwater occurring in the area, breeding at most or all the western archipelagoes, certainly at Réunion, possibly Mauritius, Rodriguez, Carajos Cargados and Chagos, certainly the Seychelles (eggs about May - June) and Maldives (eggs about December), probably the Laccadives, and somewhere along the south coast of Arabia. The southern populations from the archipelagoes have short bills and white underwings, becoming slightly larger in the Mascerene Islands than the central tropics, and belong to the race *P.lh. baillonii*. The so-called Persian Shearwater *(P.(lh.) persicus)* is a slightly larger form of this species with a longer bill (under 30m.m. in *baillonii*, over in *persicus*) and darker underwing. It occurs around the south coast of Arabia and in the approaches to the Red Sea and Persian Gulf throughout the year and probably breeds there (birds from the Maldives are *baillonii*), and has strayed south down the Indian coast to Trivandrum.

In appearance both races are small sturdy shearwaters with dark brown upperparts, a more or less pale underwing, and white underparts, a long slender grey bill and whitish-flesh feet, moderately long slender wing and short, round tails. They fly with a very rapid flutter and glide low over the water, circling much in flight, and settle, swim, and dive freely. The species occurs in flocks off the Arabian coast but is more usually solitary elsewhere, being seen most often in the vicinity of its breeding sites though it sometimes scatters widely at sea. It usually seems to be a winter breeder. It should not be mistaken for anything else in this area except the very similar but smaller subantarctic Dusky Shearwater *(Puffinus assimilis)* which is jet black above, whiter below, has bright grey-blue feet, and stays over cooler waters to the south and south-west.

JOUANIN'S PETREL *(Bulweria fallax)*. A large Indian Ocean representative of Bulwer's Petrel of the Atlantic and Pacific, probably best regarded as a race of that species. It has long been overlooked or confused with the Wedge-tailed Shearwater or Mascarene Petrel, and the first specimen was only described some five years ago, but many more have now been reported coming aboard ships in the Arabian Sea and Gulf of Aden throughout the year, and it seems to be quite common there. It seems fairly certain it must breed in this region, probably somewhere around the southern Red Sea archipelagoes, Socotra, or the Kuria Muria Islands in the northern summer, possibly dispersing south into the tropics like Bulwer's Petrel in winter. It seems to feed alone further out to sea than the shearwaters, which tend to flock immediately offshore.

In appearance it is a lightly built, medium-small uniform brownish-black (sometimes shows paler upper wing coverts) gad-fly petrel with a short, thick black bill, flesh-coloured legs and feet with dark outer edges to the tarsus and toes, long, slender wings, and a long, wedge-shaped tail, having a very fast, swooping mobile flight, rising high over the water on the upswing. It does not normally seem to settle on the sea. In the Arabian Sea it is most likely to be confused with the larger, more heavily-built Wedge-tailed Shearwater, which has a similar but heavier and more clumsy flight, and can always be distinguished by its longer bill, while further south it could also be confused with a number of other dark gad-fly petrels which differ mainly in size. Bulwer's Petrel is similar but smaller, the Mascarene Petrel is slightly larger and more heavily built with a longer tarsus (over 36mm. where

Jouanin's Petrel is usually under), more black on the feet, and a shorter squarer tail, the dark phase of the Trinidade Petrel is equally lightly built but even larger, and the Great-winged Petrel *(Pterodroma macroptera)* is heavily-built and larger still.

BULWER'S PETREL *(Bulweria Bulwerii)*. Breeds commonly in the subtropical archipelagoes of the north Atlantic and Pacific in summer, migrating south into the tropics in winter. It has been recorded at sea north of the East Indies in the Pacific then, and may stray west through the Malacca Strait into the Indian Ocean, since one has recently been collected in August in the Maldives. In appearance it is essentially a smaller version of the last, little bigger than a large storm-petrel, with a very fast, mobile, swooping flight.

MASCARENE PETREL *(Pterodroma aterrima)*. Only known from four skins, two probably belonging to young birds, taken over a hundred years ago in the Mascarene Islands, probably on Réunion. It may still occur there, since petrels are still said to breed in numbers in the inland cliffs. In appearance it is a heavily-built medium sized black gad-fly petrel with a short, very massive black bill, rather long legs with the inner third of the inner part of the foot pink, the rest black, meeting the pink at a sharp border, a moderately long wing, and a moderately long, slightly pointed tail, very like a small version of the Great-winged Petrel *(Pterodroma macroptera)*, of which it could be a small race. If it is true that it is related to this species (it is also rather like the much smaller tropical Fiji Petrel *(Pterodroma macgillivrayi)* of the Pacific) it is likely to be a cool-water bird breeding in the winter and dispersing south in summer, which might explain how it has escaped observation for so long. There is no record of what it looks like alive, but it doubtless looks like a small Great-winged Petrel, heavier built and squarer in the tail than other Indian Ocean gad-fly petrels, with an even faster, more impetuous flight. It is most likely to be confused with the dark phase of the Trinidade Petrel in Mascarene waters, but is darker, heavier-built and shorter in the wing and tail (about 250mm. and 100m.m. in the Mascarene Petrel, 280mm. and 110mm. in the Trinidade Petrel).

TRINIDADE PETREL *(Pterodroma arminjoniana)*. A population of this subtropical South Atlantic species has recently been found breeding in the summer at Round Island, Mauritius, while three birds in the Réunion Museum also appear to belong to this species and it may breed there as well. The Herald Petrel *(Pterodroma heraldica)* of the Tasman Sea and South Pacific is a slightly smaller race of the same species, which therefore has a circumpolar range in the subtropical zone of the southern hemisphere. Some rather mysterious petrels reported at sea occasionally all over the subtropical southern Indian Ocean and possibly the Arabian Sea as well appear to be this species ; if the latter records are correct the bird seems likely to be a migrant wintering to the north.

In appearance it is a very variable moderately large, lightly-built gad-fly petrel with a short bill, long slender wings, a fairly long pointed tail, and a fast, swooping flight. Most birds breeding on Round Island are apparently in the dark phase, dark brown all over with a black bill, legs and feet, but some, and those reported from Réunion, are light, paler brown above, with a pale face and chin, mottled breast

band, underwing and flanks, in the extreme form a white belly, and pink and black bills, legs, and feet. The dark phase is particularly likely to be confused with the smaller, more sturdy Mascarene Petrel, which has a shorter, squarer tail, or the dark phase of the Wedge-tailed Shearwater, which has a longer, thinner bill. The pale phase differs from anything else occurring in the area in having mottled underparts, from the white-breasted shearwaters in its shorter bill and dark breast-band, from the Soft-plumaged and Schlegel's Petrels *(Pterodroma mollis* and *P.incerta)* in having a mottled, not uniformly dark, underwing.

WILSON'S STORM-PETREL *(Oceanites oceanicus)*. This is the only small, dark, white-rumped storm-petrel normally occurring in the Indian Ocean. Most from this area are rather small, agreeing with birds breeding at Kerguelen and the Crozets, though they show the full range of variation recorded in the species at times. They arrive from the south in May and disperse throughout the area north to the middle of the Red Sea in summer, most leaving in early November though there are several winter records in the Gulf of Oman area. They usually avoid the open ocean and stay near the continental shelf, gradually concentrating in the areas of upwelling during the summer, flocks of thousands and tens of thousands accumulating in the Gulf of Aden and off Cape Comorin at the end of the season. They tend to moult rather late in the year, later than in the Atlantic, in August and September, possibly making use of a food-maximum during the peak of the south-west Monsoon. Their identification should present no difficulty, but it may be remarked that the yellow webs to the feet are usually hard to see in the field, while a pale phase with a heavily streaked white breast was collected three times off New Zealand in the last century, and one rather similar bird has been reported at sea in the Indian Ocean.

WHITE-FACED STORM-PETREL *(Pelagodroma marina)*. The rather small race which breeds in the southern summer along the south coast of Australia and possibly in the past on St. Paul and Amsterdam Islands migrates to moult in the winter all round the northern periphery of the Indian Ocean, where they have now been seen on northward migration off Mombasa in May, and both seen and collected far offshore around the mouth of the Gulf of Aden, Ceylon, and Java in the middle of the summer, leaving again about September. This is the only storm-petrel occurring in this area which is all dark above and all white below, flying like the other southern species, low over the waves with the legs dangling, "walking on the water." Owing to the presence of a dark ear-patch it might also be confused with the phalaropes in winter plumage, but it does not normally occur in flocks or swim while they never "patter" over the water. There is one record of a bird with dark underparts.

WHITE- AND BLACK-BELLIED STORM-PETRELS *(Fregetta grallaria* and *tropica)*. These are so similar in so many ways that it might be better to regard them as races of the same species. Both breed in the far south, *F.tropica* further south, and winter in the central tropics. In the Indian Ocean they have been seen on spring passage east of Madagascar and Mombasa in May and reported in the centre of the Arabian Sea by a number of independent observers throughout the summer, departing about September. In the field both rather resemble large

Wilson's Storm-petrels, appearing dark with paler coverts and white rumps above, and running low over the water so that the distinctive white belly is hard to see, and they may have been overlooked by some observers for this reason. The exact forms which occur are hard to determine, because the distinctive belly-markings are variable and hard to see, but the "Black-bellied Storm-petrel" *(F.tropica)* certainly does because there is a specimen labelled "Indian Ocean" in the British Museum and G. S. Willis has produced a good drawing of another seen in the central Arabian Sea. Other white-bellied birds reported from time to time may belong to a white-bellied population of *F. tropica* nesting on Gough Island or the true "White-bellied Storm-petrel" *(F. grallaria)*, which has still to be collected in the area. Members should pay particular attention to any birds of this group which come aboard ; the measurements are particularly important for identification, the tarsus measuring more than 39mm. in *F. tropica*, less in *F. grallaria*. Both species may be either pure white or marked below ; *F. tropica* normally has a line down the centre of the breast in the dark phase, whereas *F. grallaria* sometimes has the breast more uniformly streaked with no concentration of the markings in the middle, and may at times be uniformly dark all over.

SWINHOE'S STORM-PETREL *(Oceanodroma (leucorhoa) monorhis)*. This bird, now usually regarded as a dark-rumped race of Leach's Petrel *(Oceanodroma leucorhoa)*, the only one likely to enter the Indian Ocean, breeds around Japan and the Pescadores and winters around the East Indies. It quite commonly enters the Malacca Strait and some must disperse into the Bay of Bengal since there are now a number of sight records there while it has been collected in the Andamans and Ceylon. It is commonest at the opposite season to Wilson's Petrel, in the northern winter, but may occur throughout the year, and may be distinguished from it easily by its dark rump, short legs, forked tail, and distinctive flight, bounding and swooping over the water like a tern and never pattering. It is only likely to be confused with two very similar but larger north-west Pacific species not mentioned in Alexander's "Birds of the Ocean," Tristram's and Matsudeira's Storm-petrels *(Oceanodroma tristrami* and *O. matsudeirae)*, which both breed in the Bonin area and normally winter somewhere to the north-east of the East Indies, but might wander into our area. They may be recognised by the fact that in addition to being larger Tristram's Storm-petrel is very blue above with pale marks on the upper wing-coverts and rump, whereas Matsudeira's Storm-petrel is very like a Black Storm-petrel *(Oceanodroma melania)*, dark brown all over with slightly paler coverts, but has distinctive pale shafts to the primaries.

OTHER SPECIES. A number of other species have been recorded from time to time from different parts of the Indian Ocean, especially the Arabian Sea, but I have tried to investigate all possible records and cannot substantiate any of them, while it is usually obvious a mistake has occurred. Reports of the occurrence in the area of such forms as the Mediterranean or Manx Shearwaters *(Puffinus kuhlii (=diomedea)* and *P.puffinus)*, the typical race of Leach's Storm-petrel *(Oceanodroma l.leucorhoa)* or the British Storm-petrel *(Hydrobates pelagicus)* among other species seem frankly improbable and cannot be accepted in the absence of specimens.

I have tried to summarise this information in the tables to show,

first, the status of all the species normally found in the Indian Ocean proper in the three areas into which the area may be divided, the Arabian Sea, Bay of Bengal, and southern Indian Ocean north of the sub-antarctic zone ; and then the characters which may be used to distinguish the more difficult species. I have grouped the birds first according to the colour of the underparts and then in groups of related species of decreasing size in the second series of tables. Taken together these characters should make it possible to identify all species occurring in the area except possibly the "*Fregetta*" and "*Oceanodroma*" storm-petrels, where measurements may be required. I have given these for the exposed culmen (chord of the bill from feather edge above to tip), tarsus (notch behind to knuckle in front of leg), wing (greatest distance from angle to tip of flattened wing) and tail (base of middle feathers to tip of longest) for the Indian Ocean populations of all species in any case, so that identities can be confirmed whenever birds come aboard. All individuals not in moult should show dimensions lying well within ten per cent. of these averages, all the measurements running high or low together.

Finally, I should like to emphasise some points which still require investigation. The identity and general range of most species except the vagrants and "*Fregetta*" and "*Oceanodroma*" storm-petrels is now fairly clear, but their distribution still needs plotting in detail and the precise timing of their migrations needs to be worked out. Much more information is required about the time and place of breeding for many species, especially around the Mascarene Islands and the south coast of Arabia, while the place and time of moult needs to be worked out for others. Further information on the behaviour and appearance of many species would also be useful (the Mascarene Petrel does not appear to have been seen alive in this century at all, for example), while little is known about the surface-water-temperature preferences or food of any of them. Any information on any of these points could be useful. I have marked doubtful points with a question mark in the first table.

Status and Distribution of the Petrels in the Indian Ocean

(It must be remembered that among the migrant petrels some birds usually fail to migrate, and some, probably usually young birds, frequent the winter quarters throughout the year. They usually moult in the winter quarters if they migrate.)

1. Arabian Sea

Probably more or less resident ?

Jouanin's Petrel ; summer breeder?

Audubon's Shearwater ; winter breeder?

May be resident or migrants from the south ?

Wedge-tailed Shearwater ; normally a summer breeder in either hemisphere.

Migrants from south-west Australia :

Pale-footed Shearwater.

White-faced Storm-petrel.

Migrants from sub-antarctic islands :

Wilson's Storm-petrel.

"*Fregetta*" Storm-petrels.

2. Bay of Bengal

Migrants from south, mainly May–September :

Pale-footed Shearwater.

Wedge-tailed Shearwater (might breed?).

White-faced Storm-petrel.

Wilson's Storm-petrel.

("*Fregetta*" Storm-petrels might occur).

Migrants from N.W. Pacific, mainly November–March :

White-faced Shearwater.

Swinhoe's Storm-petrel.

Bulwer's Petrel? (probably unusual?).

(Matsudeira's Storm-petrel might occur).

3. Southern Indian Ocean

Resident, winter breeders :

Great-winged Petrel (S.W. Australia).

Dusky Shearwater (S.W. Australia).

Mascarene Petrel? (Mascarene Is.)

Audubon's Shearwater? (western Is.).

Migrants, summer breeders :

Pale-footed Shearwater (S.W. Australia).

White-faced Storm-petrel (South Australia).

Wilson's Storm-petrel (sub-antarctic Islands).

"Fregetta" Storm-petrels (sub-antarctic Islands).

Status uncertain, breed in summer, may migrate :

Wedge-tailed Shearwater (all archipelagoes?).

Trinidade Petrel (Mascarene Islands).

Virtually all the petrels normally visiting the Indo-Atlantic segment of the Southern Ocean may occur as migrants or vagrants in the south and south-east of the area.

PETRELS WITH PALE UNDERPARTS

Species	*Size & Build*	*Upperparts*	*Underparts*	*Bill*	*Legs & Feet*	*Wing & Underwing*	*Tail*	*Flight*	*Area*
Schlegel's Petrel	very large, heavy, 18ins.	dark brown, paler head	breast brown, belly white	thick, short, black, 38mm.	black and pink 44mm.	very long, dark 320mm.	medium, round 135mm.	very fast, swooping	South and SE
Trinidade Petrel	medium large, light 16ins.	light brown	white, breast band and flanks mottled brown	black and pink 29mm.	black and pink 36mm.	very long, mottled 285mm.	medium pointed 115mm.	fast, swooping	S, (N?) sub-tropics
Soft-plumaged Petrel	medium, fairly heavy 14ins.	grey, darker ears and coverts	white, dark shoulder or breast band	short, thick, black, 28mm.	black and pink 34mm.	very long, dark 255mm.	medium, round 112mm.	fast, swooping	South and SE
Brown Petrel	very large, heavy 19ins.	grey-brown	white, dark under tail coverts	long, thick, pale, 46mm.	whitish 59mm.	long, broad, dark 335mm.	short, round 112mm.	flapping	South and SE
White-faced Shearwater	very large, light 19ins.	brown, face streaked white	white	long horn 50mm.	flesh 51mm.	long, broad, white 325mm.	long, pointed 145mm.	swooping and soaring	Bay of Bengal
Wedge-tailed Shearwater	medium large, light 15½ins.	light brown	dusky or white, no mottling	long, black and pink 37mm.	flesh 48mm.	long, broad white 285mm.	long, pointed 128mm.	soaring and swooping	SE, wandering?
Audubon's Shearwater	small, heavy 12ins.	dark brown	white, dark shoulder patch	long, thin, dark 27-30mm.	whitish 38mm.	narrow whitish 195mm.	short, round 75mm.	flutter and glide	Western half of area
Dusky Shearwater	small, heavy 11ins.	black	whiter, less shoulder patch	long, thin dark 24mm.	blue-grey 36mm.	narrow white 173mm.	short, round 64mm.	flutter and glide	South and SE

PETRELS WITH DARK UNDERPARTS

Species	*Size*	*Build*	*Markings*	*Bill*	*Legs*	*Wing*	*Tail*	*Flight*	*Area*
White-chinned Petrel	very large 21½ins.	heavy	black, white chin	long pale massive 51mm.	black 65mm.	long, broad 374mm.	medium, round 128mm.	heavy, flapping	sub-antarctic
Pale-footed Shearwater	large 19½ins.	heavy	uniform dark brown	long, pale massive 42mm.	flesh 54mm.	long, narrow 316mm.	short, round 110mm.	flutter and glide	whole area ?
Wedge-tailed Shearwater	medium-large 15½ins.	light	medium brown	dark, long, slender 37mm.	flesh 48mm.	long, broader 285mm.	long, pointed 128mm.	soaring, swooping	whole area ?
Sooty Shearwater	large 18ins.	heavy	grey, pale underwing	dark, long, slender 42mm.	blue-grey 56mm.	long, narrow 290mm.	short, round 88mm.	flutter and glide	vagrant ?
Short-tailed Shearwater	medium-large 13ins.	heavy	grey, dark underwing	shorter, thicker, dar, 32mm.	blue-grey 52mm.	long, narrow 278mm.	short, round 83mm.	flutter and glide	vagrant
Great-winged Petrel	very large 16ins.	heavy	black	short, thick, black 36mm.	black 43mm.	very long 310mm.	medium, round 128mm.	very fast, swooping	sub-antarctic
Trinidade Petrel	medium-large 16ins.	light	light brown	short, black, 29mm.	black 36mm.	very long 285mm.	medium, pointed 115mm.	fast, swooping	S, (N ?) sub-tropics?
Mascarene Petrel	medium 14ins.	heavy	dark brown	short, thick, black 29mm.	pink and black? 37mm.	long 250mm.	shorter, squarer 100mm.	?	Reunion and South?
Jouanin's Petrel	medium-small 14ins.	very light	dark brown	short, black 29mm.	mainly pink 32mm.	long and slender 240mm.	long and pointed 125mm.	soaring, swooping	Arabian Sea, tropics ?
Bulwer's Petrel	small 11ins.	very light	dark brown	short, black 21mm.	mainly pink 27mm.	long and slender 200mm.	long and pointed 110mm.	soaring, swooping	vagrant, Bay of Bengal ?

STORM PETRELS

Species	*Size & Build*	*Upperparts*	*Underparts*	*Bill*	*Legs & Feet*	*Wing & Underwing*	*Tail*	*Flight*	*Area*
Matsudeira's Petrel	small, very light, 9ins. very small,	brown, paler coverts	dark	short b ack 18mm.	short, b'ack 28mm.	long and slender 185mm.	long and forked 95mm.	soaring, swooping	vagrant to Bay of Bengal ?
Swinhoe's Storm petrel	very small very light, 7ins.	brown, paler coverts	dark	short, black 14mm.	short, black 24mm.	long and slender 160mm.	long and forked 75mm.	soaring, swooping	Bay of Bengal
Wilson's Storm-petrel	very small light, 7ins.	dark brown, paler coverts, white rump	dark, may rarely be streaked	very short, black 12mm.	black and yellow 35mm.	short, rounded 143mm.	short, square 65mm.	fluttering, pattering	whole area
White-faced Storm-petrel	very small, light 8ins.	grey, dark ear patch	white, dark shoulder patch	short, dark thin 17mm.	black, yellow webs 43mm.	short, round white 159mm.	short, square 76mm.	patter and skim	whole area
" White-bellied " Storm-petrel	very small, light 7½ins.	Sooty, usually white edges and rump	usually white. May be streaked or all dark	short, dark, 15mm.	black short mid toe 37mm.	short, round white 170mm.	short, square 80mm.	flutter and hop	whole area ?
" Black-bellied " Storm-petrel	very small, light 7½ins.	sooty, white rump	white, usually dark central line	short, dark 15mm.	black long mid toe 41mm.	short, round white 165mm.	short, square 78mm.	flutter and hop	whole area

NOTES FROM HOME

FROM A COUNTRY GARDEN

It's nice to have a really tame thrush about the place. For the second year running she has been with us, never failing to be on the spot at all our meals out of doors, closing at full speed with gigantic hops as soon as the loaded tray appeared in the garden, or coming boldly to the table indoors through the French windows.

She brought off her first brood of five youngsters from a nest perched rather precariously in a crutch of the climbing rose up the house wall about a foot below a bedroom window.

At the end the nest tilted alarmingly, but it had done its duty and that was good enough.

The Ophelia roses were in full bloom on 2nd June, peeping over the window ledge. Our thrush had long since completed the operation of taking pieces of cheese from our fingers and feeding her "full fliers" as they took shelter in the rose garden. The spotted flycatchers were back again and would be tucking their nest under the eaves of the roof as usual I supposed.

My wife was leaning out of the window selecting rose buds to arrange in the copper bowl when the secret was unfolded. Neatly woven within the mud-lined cup of the thrush's nest was the smaller egg cup of the flycatcher's nest, and four delicate eggs were there to tell the tale.

It is perhaps not unusual for flycatchers to adopt unconventional nesting sites, but this nest was placed so symmetrically within the old nest that it looked as if it had no anchorage of its own whatsoever. Indeed it had not for five days later after a night of wind and rain the combined nests presented a dreadful sight. The all important stem of the rose had broken from the wall. The thrush's nest was almost capsized and the flycatcher's had lurched sideways so that its rim protruded alarmingly. The hen bird was holding the fort nobly, but emergency measures were essential. Already her five eggs were all a'top of each other. A criss-cross of sticks and stout twine soon put matters to rights, and there the trouble ended.

Away to the left of the house the pied wagtails were now feeding their fledgelings in a nest above the wistaria close under the roof. Sitting on the lawn one could count six nests about the house with the starlings popping in and out of a chimney pot and the sparrows and the blackbirds' second brood lodged in the pyracantha.

I shall not forget easily the 24th of June. The young flycatchers were adorning the wire jacketstay of the tennis stop netting, but I was no longer interested in them. A fine privet hawk moth does not come to hand so often, and here was a splendid specimen resting on the stone sundial. As I hurried to report the news my wife came walking down the garden with something cupped in her two hands. A young bird I supposed, and so it was, and taken inside our bedroom, but one I had certainly not seen in the hand before—it was a fully grown lesser spotted woodpecker.

It's surprising what comes one's way.

G. S. TUCK.

NOTES FROM A FORTNIGHT'S TRAVEL IN SUTHERLAND AND WESTER ROSS

(Note by Editor:—C. F. Marshall was pottering in the far north of Scotland during the first fortnight in July, and what a fine time for the birds—some extracts from his notes are reproduced below.)

" WHITETHROATS were singing near the shore at Helmsdale in bushes above the beach. This is so close to Caithness that one would expect them to be found in that county, too, somewhat contrary to the Handbook.

SAND MARTINS were common in places right up to Durness, generally over the lochs and burns, and did not bear out the Handbook's remark that they are scarce in the extreme North of Scotland. Swifts, swallows and house martins were less common, particularly north of Lairg where I saw all four species.

GREENSHANK. One kept near us, calling from a perch on a dead shrub, while we had lunch on the shores of a loch near Altnaharra on June 30th. Another was seen near Loch Hope on the same day, and a third on some saltings north of Ullapool. We were not searching for them particularly so they must be fairly numerous in that area.

GADWALL. The only nesting ducks which we saw were gadwall, a pair near Strathpeffer, two pairs where a river entered a lock near Elphin, and a single bird on a lock near Durness. The Elphin birds had five ducklings between them.

GOLDEN EAGLE. One on Ben Loyal, the best view I have ever had. As we were standing still it suddenly came into view below us sweeping across a corrie.

RED THROATED DIVER. Our first pair was on a hill lochan on Ben Loyal, wilder than those seen later on an inlet off Enard Bay where they were fishing in a flat calm sea. They came within a few yards of where we were sitting.

One has to be very near to identify the redness of the throat which appears black at any distance.

None of the red throated divers which we saw made any call, nor did our first BLACK THROATED DIVER which was easily distinguishable by its black markings. Later on Loch Stack we saw another black throated diver just off an islet. This bird was giving a tremendous two syllable call which must have been audible at a great distance. A third bird on a loch south of Lochinver gave two different single syllable calls, one of the " honk " type—the other rather like a short " bark."

The National Trust now has a wooded gorge below Braemore Lodge south of Ullapool. I was rather pleased to see a treecreeper there and very surprised to hear a wood warbler singing within a few yards of a coach party going down to look at the falls.

On our way back to Perth we looked in at the ospreys (labelled route with A.A. signs!) on the moor near Loch Garten. The procession of people towards the observation post was as surprising as anything we saw in the north, 100,000 last year they said. Even if divided by five it is a goodly number.

It was a wet day at Aviemore and we missed seeing the Scottish crested tit or the crossbill, but on all accounts they are both plentiful given time to search.

Looking back over this family holiday where bird watching was only a secondary occupation and we had no special tips on where to go it seems that on the whole the comparatively rare birds in summer —the divers, greenshank and so on—must be fairly plentiful in Sutherland and Wester Ross. We saw fewer ravens (three) and many fewer buzzards (four) than I had expected, but we had a close up view of a polecat which came as a great surprise. Of all the places where we stayed Lairg had the greatest variety of birds including Slavonian Grebes on the loch where they could be heard calling."

SEA BIRDS IN THE NORTH-WESTERN APPROACHES

(Note by Editor:—Lieutenant J. Y. Norris spent seven weeks in H.M.S. "Owen" during July and August, 1960, surveying in the vicinity of the Stanton Banks to the south and south west of Barra Head. The general pattern of the sea bird life described in his report is already well known, and only certain extracts are included below.)

"Close inshore the Herring Gull was by far the most common gull, but Lesser Black-backs and Black-headed gulls were plentiful enough. An occasional Greater Black-back and a sprinkling of Common Gulls were seen.

Further out to sea the Lesser Black-backs progressively replaced the Herring Gulls until at the 100 fathom line sixty miles west of Barra Head only Black-backs remained.

As Larus gulls thinned out, Fulmars, Gannets and Kittiwakes took their place.

FULMARS. Though none were dark all over, very few indeed had the clear grey of the textbook description of the light phase. Mostly they were a sooty brown-grey on wings and tail with the white head, underparts and wing patches of the light phase.

GANNETS. These were observed in all stages of plumage, many swimming strongly on the surface. Several young Gannets with considerable black on their wings had already acquired the characteristic adult golden tinge to their heads and necks. I had always read that this was the last part of the adult colouring to be acquired.

MANX SHEARWATERS. Rafts of up to thirty or forty were common in the Firth of Lorne and North Channel."

Lieutenant Norris supports Captain Aikman's difficulty in distinguishing between Guillemots and Razorbills at sea for he says: "I find these two almost impossible to tell apart at sea as one is seldom allowed to approach close enough to distinguish the bill."

BIRD-WATCHING BY RADAR

By Lieutenant M. B. Casement, R.N.

Bird echoes can be a real problem now that the power and definition of modern radar sets have increased so greatly, and trials of one particular set in the Gibraltar area were hampered by a migration of hawks, eagles and vultures taking place across the Straits.

I well remember an incident in H.M.S. Newcastle during the Korean war. An unidentified echo was being tracked in the radar Plot and the ship went to action stations. Suddenly out of the haze appeared a flight of geese which circled the ship on creaking wings and disappeared on their long journey south.

Large birds, then, are readily detected by Naval Air Warning and Navigational sets but the value of the radar set as an aid to bird watching has been overlooked in the Royal Navy.

What is not so widely realised is that smaller birds also are detected by radar as they stream across the sea in their thousands. Most small passerines do not migrate in tight flocks, and by themselves are too small to appear as individual echoes but in the mass cause a "cloud effect" on a radar P.P.I. Indeed they are easily overlooked as rain clouds and it is only after carefully plotting the movement and comparing this with the speed and direction of the wind that it is possible to classify them as birds.

In this country Dr. David Lack, working in close co-operation with the Royal Radar Establishment and the Royal Air Force, was able to analyse the operator's reports and photographs of the radar displays of the Early Warning sets on the East Anglian coast. Lack was able to show that migration across the North Sea takes place on a far larger scale than hitherto suspected, and moreover that there is some movement back and forth during all months of the year and not merely during the peak months in spring and autumn. These movements are closely connected with changes of weather conditions and a cold snap on the Continent may cause a reversal of the movement during the spring migration.

Most migrants migrate at night and too high to be seen visually, which explains why so many movements are overlooked. Moreover height varies with the direction and strength of the wind. In general birds fly lower in a head wind, and it is these birds which are most usually recorded visually at sea.

With radar it has been possible for the first time to make an accurate measurement of the heights of birds on migration. Lack found that this varied with the time of night but was generally about 3,000 to 4,000 feet, but occasionally there were small numbers up to as high as 20,000 feet.

Much more information is required on this subject, and this is where ships might be able to help. How does height vary with wind, cloud conditions and visibility? There is evidence that in bad visibility birds fly lower; does radar confirm this or do they fly higher in order to take a sun-sight or star-sight? To what degree are birds disorientated on meeting overcast conditions at sea?

Due to Dr. Lack and his colleagues we now know a great deal more about migration across the North Sea. By compiling regular observations from these static radar sets in East Anglia a detailed picture of this area is being built up over the years. Obviously a ship which is

continually on the move cannot provide such a complete record, but nevertheless irregular reports from ships at sea may throw light upon some of the mysteries that still puzzle us:—

Ringing results indicate that some birds, e.g. Wheatears migrating south from Greenland, do so direct across the Atlantic for at least 1,400 miles until they reach the south-west coast of Spain and N.W. Africa and not via the British Isles. If this is so, then can ships on the Atlantic run confirm it? If weather ships are fitted with radar sets capable of detecting bird echoes they would be able to give especially valuable information. Can R.N. ships on patrol, or fishing vessels, give any records of the initial courses of birds setting out from Iceland?

Radar indicates that a certain number of birds caught up in the south-westerly surge of migration in autumn are carried straight across the British Isles and out into the Atlantic. This seems suicidal—where do they end up?

In the Mediterranean large birds of prey cross the sea by the three shortest sea routes—Gibraltar, Sicily and Malta, and the Dardanelles, but there is strong evidence that passerines cross on a broad front. Can ships confirm this by radar, and to what degree is there "bunching up" at the shorter crossing routes?

These are merely a few of the problems which we at sea may be able to help to solve. Dr. Lack has shown what a valuable new tool radar can be for research, and there are many other parts of the world where we can detect and track migration when once we have learned to recognise what we are looking for.

There is feverish activity in ornithological circles today carrying out research into bird orientation, navigation and migration; one can hardly open an ornithological publication which does not contain some exciting new discovery or theory.

The sun arc hypothesis of G. V. T. Matthews now seems to be fairly widely accepted and was even explained on television and in the press recently. The experiments of Dr. Sauer in Germany about star navigation have been received with wide interest, and the complete explanation of this incredible sense possessed by birds seems to be not far off. The validity of these theories now has to be tested fully in the field, and thanks to radar this is now possible. Here is a wonderful chance for us to provide some of the missing pieces of the jigsaw puzzle.

I personally would be extremely interested to hear from anyone who has had any experience in plotting migration by radar from a ship at sea, and from anyone who is interested like me in trying their hand at this now form of bird-watching.

(Note by Editor:—The photographs relating to this article were taken at a radar station in East Anglia and we are greatly indebted to Mr. H. K. Sutcliffe of the Royal Radar Establishment for making them available. The photographs are Crown Copyright Reserved and are reproduced with the permission of Her Majesty's Stationery Office.)

Fig. 1. Spring migration at 0400 hours, 25th March, 1957. Birds are moving in direction 080 degrees out to sea. Rain clouds are seen 100 miles N.E. Land echoes to N.W. and W.

Fig. 2. Dense spring migration at 1000 hours, 30th March, 1958. Rain clouds to S.W. and S.E. Dark circle in centre due to deliberate screening of display.

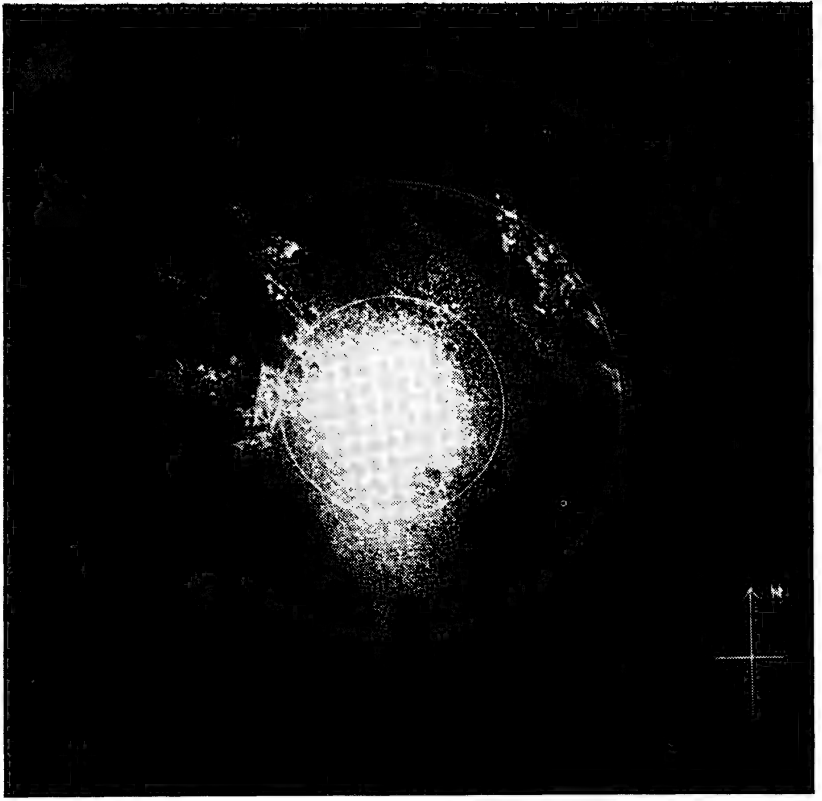


FIG. 1

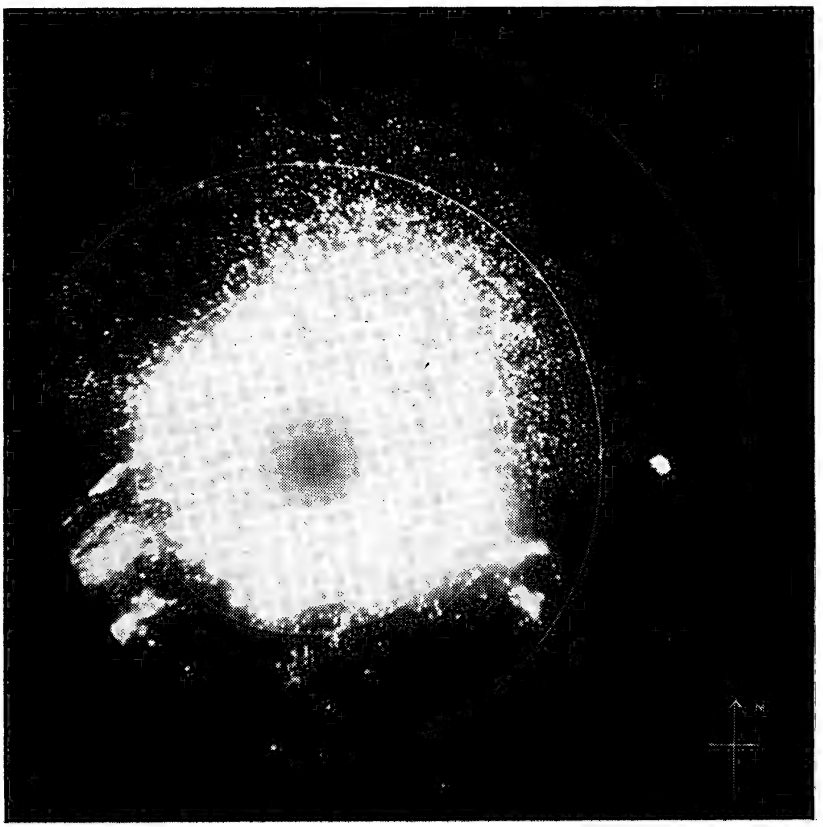


FIG. 2

CHICK FEEDING IN THE WANDERING ALBATROSS

(Diomedea exulans)

(Note by Editor:—Recent issues of Sea Swallow have contained articles on the habits of the wandering albatross. We are indebted to Mr. W. L. N. Tickell, and to the publishers of "Nature," for permission to reprint the following article by Mr. Tickell, (Nature, Vol. 185, No. 4706, p.p. 116 - 117, January 9, 1960).)

It has long been known that the young of the wandering albatross *(Diomedea exulans)* do not fly until eight or nine months after hatching, and the problem of how this long fledgeling period fits into the breeding cycle of the adults has caused some speculation among naturalists acquainted with the species. It is only recently that detailed study within a large population has been undertaken.

As early as 1929 it was suggested that individuals of the species may not breed each consecutive season, because of the necessity of feeding the young throughout their first winter. Such a phenomenon was held by Murphy to be highly improbable. It was maintained that the only hypothesis consistent with the few other available winter observations at breeding stations was that the chicks, after being fed for the first three or four months, were deserted by their parents, who departed to sea to prepare for the following breeding season. The nestling, it was stated, went for the last four months, throughout their first winter, without feeding, but surviving off stored body reserves of visceral and subcutaneous fat until fully fledged and able to leave the nesting grounds, shortly after the adults had returned again to breed.

Studies of the related royal albatross *(Diomedea epomophora)* have since demonstrated a bi-annual breeding cycle in which the young are fed throughout the fledgling period of 236 days. Since Matthews's original description, winter feeding in the wandering albatross has been noticed at three other stations. In the Antipodes Islands, eight-month-old chicks were receiving meals, and at Kerguelen, feeding has been seen during August and September. On Gough Island, adults were observed with eight-month-old chicks some time before the return of breeding birds.

Recent workers at South Georgia spent five months in the field during October 1958—March 1959, most of it on Bird Island, 54°00'S., 38°02'W., the densest breeding ground of the wandering albatross in the world.

The albatross returns to South Georgia in mid November; but before the return of the main body of breeding birds single adults were observed paying brief visits to nestlings of not more than ten minutes' duration. Banding operations began at Bird Island on November 26th and during the following month 656 nestlings were banded. In the course of this work, nestlings being handled frequently regurgitated large fresh meals and the sight of adults feeding young was fairly common. There is no direct evidence that these adults were in fact feeding their own young; but nestlings were often seen begging from adults which refused them. Conversely, there is no indication in the royal albatross that adults feed random chicks.

In adult wandering albatrosses there is a significant difference in body weight between the sexes, but at the time of departure the few young examined were not necessarily lighter or heavier than the adults. The range of body weights in twelve juveniles a few days before leaving,

varied between 5.6 and 11.3kgm. while that of 105 adults of both sexes was 6.35 to 9.15kgm.

(Note by Editor:—Here followed observations of loss of weight of juveniles over periods before departure from nests. The details are omitted but provide evidence which bears on what follows.)

Thus a young albatross leaving the breeding grounds in December with a flight weight of 9kgm. must, if it had fasted the whole winter, have weighed over 23kgm. the previous July—more than twice the weight of an adult male. Rankin, calculating from daily weight increments of four chicks in the month following hatching, estimated that the weights at the end of June would be between 13.9 — 11.8kgm. In comparison with adult weights these appear to be reasonable estimates, but they are strictly comparable with those of fully fledged juveniles preparing to depart in December. Thus they are no evidence for the hypothesis that they are put forward to support; rather the reverse, for young albatrosses of such peak weights would not have survived a winter without regular feeding.

The young of most of the procellariiformes reach peak weights in excess of the parent body weights. In some species they may be deserted by adults but recent studies have demonstrated that it is more usual for the young to lose surplus weight during the latter part of the fledgeling period while they are still being fed, although this feeding is less frequent than during the earlier part of the chick period.

While nothing can yet be deduced of the feeding regime of the wandering albatross, the evidence now available clearly indicates that the young are fed throughout the fledgeling period. The "starvation" hypothesis is therefore untenable and it must be held that the wandering albatross, like the royal albatross, breeds only once every two years.

W. L. N. TICKELL.

Falkland Islands Dependencies Survey,
London.

October 10.

BIRD NOTES OF A VISIT TO ISLANDS IN THE SEYCHELLES AND ADJACENT GROUPS NORTH OF MADAGASCAR

By Leading Coder F. R. P. Boulton, H.M.S. "Leopard"

(Note by Editor:—During November, 1959, H.M.S. "Leopard" visited a number of islands North of Madagascar and Leading Coder Boulton has recorded his impressions of bird life seen during the few hours at his disposal at each island. The notes make no pretence at covering the bird population of the islands.)

The islands visited were MAHE, largest of the Seychelles group, FRIGATE ISLAND, north east of Mahé, ALDABRA, south west of the Seychelles in a line between Zanzibar and the north point of Madagascar, DES ROCHES ISLAND, in the Amirante Islands, south west of the Seychelles, and FARQUHAR ISLAND, to the north east of Maragascar.

Boulton was not able to visit the island of DES NOEUFS in the Amirante group where over one million pairs of Sooty Terns and eighteen thousand pairs of Noddy Terns were estimated to be breeding in 1955.

Some of the birds mentioned are known better under other names, and local names are sometimes confusing.)

MAHÊ

The island is hilly rising to many high peaks, some over 2,000 feet. Trees cover the whole island providing a great variety of nesting territory. The beaches are sandy with outcrops of coral.

As we approached the shore, Sooty and White Terns were much in evidence, and on the beach the sight of several Common Sandpipers revived memories of England. Walking along the jetty the first bird seen was a Cattle Egret, or the Tick Bird as it is called locally.

On the southern beaches were many Seychelles Little Bitterns, and there too, was a Whimbrel searching for small crabs with its slender down-curved beak. Further along, on the muddy banks of a stagnant pool, a lot of Indian Myna Birds were feeding, surely the commonest bird in the island, with a most attractive and varied song. Amongst them, to my surprise, stood a Greenshank.

The Madagascar Fody (known locally as the Cardinal Bird) was very numerous, flitting through the trees and chirping like a house sparrow. The brilliant males seem to be one of the few island birds of outstanding colour.

My visit to Mahé was but for an hour or two, but I was to see more at our next island.

FRIGATE ISLAND

Another hilly island with tree covered gorges and typical sandy beaches with much rock and coral.

Much valuable information was gained from Mr. Crook who is studying the habits of the Weaver birds, and who acted as our guide during a trip inland.

Ten different species are said to nest on the island, not to mention the several thousand Sooty and Noddy Terns colonising LIZO FRIGATA, a nearby outcrop of rock.

The first birds to be seen on arrival were a Seychelles Grey Heron, a replica of our own Common Heron, and a Sanderling on the shore line. Inshore, White Terns were brooding their single egg on the branches of the trees.

Inland the first bird seen was a TOQ TOQ, a member of the Weaver family. The TOQ TOQ is, however, a rarity I am told, confined to Frigate Island and one other island in the group. It is said to be in some danger of extinction from the presence of the "Cardinals." Mr. Crook seems to doubt this as both birds feed on different foods. On the other hand, the "Cardinal" lays three or four eggs to the TOQ TOQ'S one in each brood.

The TOQ TOQ is about the size of a sparrow and looked to me very similar to our dunnock or hedge sparrow.

Another rare bird which we were lucky to see was the PIE CHANTEUSE, the Seychelles Magpie Robin or Dial Bird. It seemed very similar in size and appearance to our blackbird, though with a black beak and white secondary wing feathers. It has a magpie's cocky habit of raising its tail as if to keep its balance. Mr. Crook had the impression that this bird, too, was not holding its own.

Shortly afterwards we spotted the small shiny blue/black species of Sunbird, the SEYCHELLES SUN BIRD, peculiar to these islands. It has the typical long down curved slender beak and habit of hovering in the air and darting hither and thither.

We had yet to see the trio of doves, and we saw all three. The GIOPELIA or ground dove, the most common of the three is very small and blue/grey/pink in general colouring. The second was very much larger, the TORTERELLE DES ISLES or Seychelles Turtle Dove, very dark with a light grey crown. Lastly the PIGEON HOLLANDAIS or Seychelles Pigeon, grey/buff in colour with a prominent red crown.

So, with the INDIAN MYNA thrown in, ended a rewarding afternoon's birdwatching.

ALDABRA ISLAND

No land is above twenty to thirty feet and this low island is covered with palms, bush and dried-up swamps. The beaches are the normal white sand and coral.

During the 650 miles passage to the island we were followed by many Sooty Terns, Boobies and Tropic Birds. I had little opportunity here for birdwatching, working as I was with the lagoon and beach survey party. However, I noticed the CARDINAL, MYNA and SANDERLING, and the PIED CROW for the first time. This crow is distinguished by the white ring encircling its neck and broadening out under the dark throat to form a white breast. Inshore there was a species of Sunbird and some small greenish finches which I could not identify.

FARQUHAR ISLAND

Another typically flat coral island, one of the more attractive of the group, with ample scrub cover right down to the beaches.

In company with the doctor I set off to a large bay where the sand lay uncovered for eighty yards or so at low tide. There were some

flocks of white Boobies in the offing, and amongst them, rather conspicuous a BROWN BOOBY. Much more interesting to me was my first view of a BLACK NAPED TERN. With its pale pearl grey wings and striking black band around the back of its neck stretching from eye to eye and broadening on the nape it is a truly beautiful tern. A whimbrel and other waders which looked remarkably like TURNSTONES were on the sand, and with them a SANDERLING. Further out a GREY HERON stood motionless, and amongst this party, conspicuous by their mottled whitish plumage and long spindally legs were three CRAB PLOVERS.

So, with a quick walk inland in which very little bird life was to be seen, apart from fleeting glimpses of some small finches, ended my brief visit to these islands.

NEW MEMBERS 1959 - 60

Elected Vice-President :

ELVISH, J. D.	Captain, C.B.E., M.N. Group Marine Superintendent, British and Commonwealth Shipping Co. Ltd.

Members :

ADAMS, P. D.	Electrical Artificer, H.M.S. Adamant.
ATKINSON, C. C.	Master, M.N., The Clan Lines Steamers Ltd.
BRADLEY, E. M.	Lieut - Commander R.N., H.M.S. Dalrymple.
CATLOW, P. I. F.	Apprentice, M.N. Messrs. F. C. Strick and Co. Ltd.
CHAPMAN, S. F.	Apprentice, M.N. The Bristol City Line of Steamships.
CLARKE, G. S.	Lieutenant, R.N. H.M.S. Decoy.
CLIFFE, D. J.	Lieut-Commander R.N. Reserve Fleet, Portsmouth.
CONLON, J. A.	Chief Officer M.N. Hunting and Sons Ltd., Newcastle.
CROSSLAND, J. R.	Electrical Artificer (A), H.M.S. Collingwood.
DAVIES, A. B.	Captain, M.N. T. & J. Brocklebank Ltd.
EASTHAM, R. G. H.	Engineer Apprentice, M.N. S.T.S. Hatasia, Shell International Petroleum Co., Ltd.
DOYLE, E. J.	Radio Officer, M.N., Lyle Shipping Co.
FIRTH, T. M. B.	Commander, R.N. Admiralty (U.S.W. Division).
HUTCHESON, G. I. D. ...	Captain, R.A.N. Cockatoo Dock and Engineering Co., Pty., Sydney, N.S.W.
KENNEDY, W. A.	Captain, M.N. R.M.S. Paraguay, Royal Mail Line Ltd.
KING, BEN F.	Ensign, U.S.N. U.S.S. Helena.
KING, P. H.	Apprentice M.N. B.P. Tanker Co. Ltd.
MILES, G. E.	Ldg. Radio Operator. H.M.S. Loch Lomond.
PEARSON, P.	7th Engineer Officer, M.N. Port Line Ltd.
POCHIN, D. R.	Second Officer, M.N. Shaw Savill Line.
SEMPLE, A.	Steward, M.N. P. & O. Steam Navigation Co. Ltd.
SUTTON, E. C., ESQ.	The Port Line Ltd.
WILSDON, H. M., ESQ. ...	Admiralty (D.N.A. Department).

Original Member rejoined :

TRIBE, C. W.	Chief Ordnance Artificer, H.M.S. Bulwark.

Hon. Member :

PROFESSOR DR. K. H. VOOUS	Zoological Museum, Amsterdam.

ROYAL NAVAL BIRDWATCHING SOCIETY

Statement of Accounts for Year ending 30th November, 1959

RECEIPTS

1958 £ s. d.	£ s. d.		£ s. d.	£ s. d.
		Balance 1st Dec., 1958:		
77 12 11		Cash at Bank		144 8 0
		Subscriptions:		
	68 8 0	Current Year ...	62 6 6	
	— — —	Arrears	2 0 0	
73 5 3	4 17 3	In Advance ...	3 14 6	68 1 0
83 10 6		Donations		12 10 6
12 10 0		Sales of *Sea Swallow*...		31 5 6
3 3 0		Sales of Sea Passage Lists		1 19 0
		Elder Dempster Line, Article in "Sea" ...		10 10 0
		Income Tax reclaimed Members' covenanted donations up to 5th April, 1959		3 2 8
250 2 5				£271 16 8

EXPENDITURE

1958 £ s. d.	£ s. d.		£ s. d.	£ s. d.
17 17 2		Postage and Stationery		15 10 10
		Printing:		
	4 15 0	Sea Passage Lists ...	1 3 9	
	7 10 0	Bulletins 41-43 ...	7 10 0	
	7 2 6	Sea and Land Bird Report Sheets ...	7 2 6	
	55 4 0	*Sea Swallow* 1958 ...	68 1 0	
	7 6	Deed of Covenant Forms	10 0	
	— — —	Deed of Covenant Appeal Letters ...	1 8 6	
	— — —	Letterhead Sheets ...	1 10 0	
	— — —	Block for Letterhead ...	2 0 0	
	11 9	Information Leaflets ...	9 6	
81 19 3	6 8 6	Members' Address Lists	— — —	89 15 3
1 2 0		Expenses—Annual Meeting		1 8 10
		Subscriptions:		
	2 0 0	B.T.O.	2 0 0	
3 0 0	1 0 0	Council for Nature ...	1 0 0	3 0 0
1 16 0		Bank Charges ...		1 15 6
		Balance 30th Nov., 1959:		
144 8 0		Cash at Bank		160 6 3
£250 2 5				£271 16 8

I have examined the above account with the books and records of the Society and certify that it is correct and in accordance therewith.

19 Fenchurch Street,
London, E.C.3.
2nd December, 1959.

R. PEGLER, Chartered Accountant
(Hon. Auditor.)
G. S. TUCK, Chairman, R.N.B.W.S.